

Biannual Environmental Monitoring Report

Loan Number: 3063 -GEO

Project Number: 42414-043

Reporting period: **July-December, 2017**

GEORGIA: SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM, Tranche 3

(Financed by the Asian Development Bank)

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December, 2017

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ABBREVIATIONS

ADB	Asian Development Bank
EA	Executing Agency
EARF	Environmental Assessment and Review Framework
EIA	Environmental Impact Assessment
EIP	Environmental Impact Permit
EMP	Environmental Management Plan
EPSM	Engineering Procurement and Construction Management
GoG	Government of Georgia
SUTIP	Georgian Sustainable Urban Transport Investment Program
IA	Implementing Agency
IEE	Initial Environmental Examination
MDF	Municipal Development Fund of Georgia
MFF	Multi-tranche Financing Facility
MoENRP	Ministry of Environmental and Natural Resources Protection
MoRDI	Ministry of Regional Development & Infrastructure
SSEMP	Site-Specific Environmental Management Plan

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1. PART I. INTRODUCTION

1.1 Preliminary information

Program background

1. Upgrading and improvement of local transport and transport-related infrastructure plays a significant role in the development of Georgia's urban infrastructure. To this effect, a number of important activities have been implemented and financed from the budget of Georgia and from other sources. Recently several significant programs, financed through state budget, loans and grants, have been implemented with this regard.
2. On December 19, 2013 - Sustainable Urban Transport Investment Program Tranche 3 Loan and Project agreements were signed between Georgia and Asian Development Bank. Under Tranche 3, ADB has agreed to lend to the Borrower from ADB's ordinary capital resources an amount of seventy three million Dollars (\$73 million). Tranche 3 is scheduled for completion by 30 June 2018, with a loan closing on 31 December 2018.
3. The program will provide efficient, reliable and affordable urban transport infrastructure and services, thereby increasing economic growth potential and competitiveness of urban communities, improving livelihoods of over 1.5 million people (approx. 35% of Georgian population). The project will also: (I) improve urban, environment and communities' access to economic opportunities and to public and social services; (II) promote efficient and sustainable urban transportation; and (III) generate income and employment opportunities.
4. The environment classification for Tranche 3 is Environmental Category B, as the impacts under subprojects SUTIP 3 are site specific and can be addressed through mitigation measures. For environmental category B, Initial Environmental Examination (IEE) was required. The environmental categorization of sub-projects was conducted by using ADB's Safeguard Policy Statement (2009).

Program Area

5. Sustainable Urban Transport Investment Program – Tranche 3 (SUTIP T3) includes:
 - (a) Construction of an approximately 6.8 kilometers 4-lane urban road link between the cities of Rustavi and Tbilisi, including a 2 kilometers urban boulevard and recreational areas;
 - (b) Construction of an approximately 1.2 kilometers coastal protection structure in the city of Anaklia (Phase II); and
 - (c) Project implementation support through financial audit and independent safeguards monitoring.

Tbilisi-Rustavi urban link (Section 2) CW Project – overview

6. The project envisages Modernization of Tbilisi-Rustavi portion of the Tbilisi-Red Bridge (Azerbaijani border) automobile road. The design road links the capital of Georgia with the major industrial and administrative center Rustavi and the district center Gardabani. Designing and constructing of other portions of the road will enable the citizens to travel and commodities to be trafficked on comfortable and modern highway to the capital of Azerbaijan, Baku. It also will make more accessible Tbilisi and the Black sea ports of Georgia for population of Azerbaijan. Apart from the abovementioned the population of Rustavi and Gardabani are the priority road customers. The mentioned portion of the design road is over-trafficked, the AADT being about 15,100 vehicles per day, when the road capacity is just 7,000. The latter determined priority of modernization of the Tbilisi-

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Rustavi road to the level of I category road with 4 traffic lanes and design speed 120 km/h (Decision had been made later to construct on Section 2 urban road with reduced design speed down to 80 km/h). Total length of the urban link is 17.4km.

7. Project details

Road length	31,36km	Main road	6.755km
		Ramps	5.54km
		Local Roads	1.14km
Excavation		820482.80m ³	
Embankment		969610.0m ³	
Concrete		84916.81m ³	
Sub-Base and Base material for the Road pavement		147248m ³	
Asphalt		79350Ton	
Culverts		Number	20
		Total length	1373.27LM
Bridges and Overpasses		33m	2bridges,14+12beams
		27m	3bridges,4+4+4beams
		19m	3bridges,4+4+4beams
Tunnels		Number	2
		Total length	80+10LM
		Change	PK4+610andPK4+640
		Total length	2505

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Retaining walls	Volume of concrete	40679.6m ³
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8. EPCM consultant JV “Dohwa Engineering ltd” (Korea) and “Transproject ltd” (Georgia) prepared and provided the final draft detailed design to MDF in February, 2014.
9. The contract for Tbilisi-Rustavi urban link (Section 2) Construction Works was signed with Sezalsaat San. Ve Tic. Ltd. STI (Turkey) on December 12, 2016. The contract amount is GEL118,988,906.6 (about \$44,9 million).
10. Taking into account that 10 apartment buildings located close to the planned road were in a poor condition decision has been made to tender Tbilisi-Rustavi Urban Road Link section 2 project upon finalization of the detailed design which would reflect the results and recommendations of the structural integrity survey of 10 apartment buildings, noise and vibration modeling, finalization of IEE and LARP agreed with ADB.
11. Although these buildings are outside of the right-of-way of Section 2 and are not directly physically impacted by the project (except one), concerns have been raised by the residents of the buildings regarding potential noise and adverse structural effects of vibrations during construction. The IEE required to conduct a technical study to address these concerns.
12. Works in the section were not carried out during the reporting period due to the ongoing compliance case. On 14 March 2016, at least 81 residents of building 12 in the Ponichala area of the road section 2 of the Rustavi Highway forwarded a complaint to the Compliance Review Panel (CRP) through the Complaint Receiving Officer (CRO) of the Accountability Mechanism of the ADB’s Board to authorize a full compliance review of the project.
13. On the 13 February 2017 CRP submitted its final report for the above project. The CRP found the project non-compliant with ADB’s operational policies and procedures in six aspects: (i) noise impacts, (ii) vibration impact, (iii) impacts on vulnerable groups, (iv) impacts on water and river ecology, (v) consultations, and (vi) environment categorization of the project. The report found air quality impact compliant.
14. In order to bring the project back into compliance, and in response to the findings of the CRP report, ADB and ADF propose to undertake an integrated approach involving additional studies for noise impact, impact on the river ecology and iterative targeted consultations at the community level with a particular focus on the vulnerable. This approach will be instrumental in identifying suitable solutions that are technologically feasible, cost effective, and compliant with all relevant standards. Also, as required by ADB’s Safeguard Policy Statement, consultations with communities must continue throughout the project, or if there are changes in the project. An action Plan is agreed as and the schedule of actions proposed is presented. ADB will share drafts of the additional studies with the CRP, as they become available to solicit CRP’s feedback, prior to finalization of the results.
15. Detailed information about conducted additional studies is provided under the para. 136-142.
16. Consulting company for conducting of the Structural Integrity Study for IEE finalization has been selected on December 19, 2014. The Contract was signed with Nord Est Progetti (Italy). Individual expert for Review of the Investigation of Structural Integrity of, and Impact of Vibration and Noise on Buildings and for Consulting MDF during the

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Implementation of the Investigation study was also recruited. MDF was working closely with the consulting company NEP, EPCM consultant ‘Dohwa’ and Individual consultant in order to conduct planned activities without delay.

17. The Consulting Company conducted the survey and submitted relevant reports in Q2 and Q3, 2015. On the bases of the survey performed (which includes modeling) Consultant gave following recommendations: one building must be demolished; vibration produced during construction works and/or exploitation will not cause the risk of collapse or damage of other 9 buildings; voluntary additions to the buildings and building N6 should be reinforced; Mitigation measures are required to reduce the expected noise levels. The conformance with the threshold of permissive noise level can be achieved through designing proper type of noise barrier wall.
18. In addition, a rigorous and extensive monitoring system should be implemented during the construction phase and will extend into the operation phase of the road, to provide added comfort and assurance of the absence of adverse impact on the stability of the buildings located along the urban road. Contractor will work according to strict, pre-defined procedures and will use only modern construction equipment. MDF ensured that relevant provisions are included in the bidding document, fully consistent with the recommendations given in the report.
19. On the bases of the recommendations provided by Nord Est Progetti, MDF took decision to request the Consultant to provide additional survey on following: study, analysis and documenting the expert conclusion on the impact of vibration, air pollution and noise to the GMP production; general design of sound barrier; engineering design for building N6 and voluntary additions. The final report on additional studies was submitted to MDF in July 2015. The recommendations and results of the modeling have been included in the detailed design.
20. GMP pharmaceuticals complaint was also taken into account and as a result of amendment, bridge of frontage road (located close to GMP) was removed and one additional foot-bridge was inserted into design.
21. The selected Contractor should implement relevant monitoring system not only during the construction process, but monitoring will be extended in the exploitation phase of the road. In addition to above, MDF initiated changes into DD that were based on the lessons learned from the implementation of the Tbilisi-Rustavi road modernization contract for Section 1 and 3. The design revision constituted carrying out of respective changes in LARP and IEE.
22. Final version of the Detailed Design was re-submitted by the Consultant on November 27, 2015 reflecting all comments. The tender document was prepared by Consultant Company and agreed with MDF. The latest version of DD was reviewed by International Road Consultant. In his opinion design package appears to meet international and ADB requirements for procurement purposes and it could be advertised for civil works tender.
23. The final version of the design documentation was submitted by MDF to ADB on 31 December 2015. The civil works tender was announced on 3 February, 2016, with the deadline of 21 March, 2016. Although, as a result of request from bidders the bids submission deadline was extended until 1 April, 2016. 9 participants submitted bids. Evaluation of Technical Bids were finalized and the Report was sent to ADB on 20 May, 2016. According to Technical Bids Evaluation Report (TBER) all 9 Bidders were found technically substantially responsive. On 8 August, 2016 MDF has received ADB's no-objection on TBER, according to which 7 Bidders were approved to be technically responsive and subject to further evaluation. Therefore, on the same day (8 August, 2016)

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MDF has issued invitations for Price Bid Opening to 7 responsive Bidders. The evaluation was completed and Price Bids Evaluation Report (PBER) was submitted to ADB on 30 August, 2016, according to which the recommendation was given to the first lowest evaluated Bidder Joint Venture of Mehmet GuneshInshaatYat. San. VeTicaret A.S./Korpu-Bina-Tikinti LLC (Turkey/Azerbaijan). The ADB's no-objection was received on 7 October, 2016 and on the same day MDF has issued Letter of Acceptance. According to procedures the successful bidder had to provide signed Contract Agreement and Performance Security within 28 days after receiving the notification, i.e. on or before 4 November, 2016. Although, the successful Bidder has failed to furnish the Performance Security and to sign the Contract Agreement. On 4 November, 2016 the Bidder has informed MDF that they refused to sign the mentioned Contract. To that end, on 7 November MDF has sent official letter to Mugan Bank – Azerbaijan, requiring forfeiture of Bid Security amount according to terms and conditions Guarantee. Mugan Bank requested MDF to split the amount in to three parts and to pay in three installments. During reporting period agreement was not reached and no amount was received.

24. Coming from the aforementioned, the MDF has moved to the next lowest evaluated Bidder and resend the PBER to ADB on 9 November, 2016, with the recommendation for Contract Award to SEZA Inshaat (Turkey). On 25 November, 2016 ADB approved the recommendation and issued its NOB. On the same day the MDF has issued the Letter of Acceptance to SEZA Inshaat, as a result of which the successful Bidder has submitted the Performance Security and signed Contract Agreement in due period. Therefore, the Contract was signed on 12 December, 2016 with the total Contract Price of 118,988,906.69 GEL. Advance Payment in the amount of 20% of the Accepted Contract Price was made on 30 December, 2016.
25. Commencement date for beginning of the mobilization and then the civil works, was defined by SC - Dohwa Engineering Co.LTD, as February, 28, 2017. Only demolition activities have been started in April. Implementation of other civil works have been started from May.

Anaklia Coastal Improvement (phase 2) Project -overview

26. Anaklia is a small town and seaside resort in western Georgia. It is located in the Samegrelo-ZemoSvaneti region, at the place where the Enguri River flows into the Black Sea, near the administrative border with Abkhazia. The project aims at Anaklia shoreline rehabilitation, restoration of the full profile of beaches to the possible limits (which is necessary for wave breaking and suppression of its power and assigns to the beach a function of bank protecting structure), selection of the most optimum types and design of hydro-technical coast protecting structures. Infrastructure improvement will support infrastructure *investments* to rehabilitate, improve and expand the beach of Anaklia and will benefit accrue principally from the protection of land and infrastructure from erosion and damage, the avoidance of some other costs and increasing number of tourists. For the interventions, benefits arise from the protection of (i) rural land, (ii) houses (iii) roads and other infrastructure. Coast protection measures need to be taken to protect the unique place and landscape. The design of approximately 4 kilometers of coastal line will create a new and attractive tourist destination on the Black Sea Coast, able to be the engine of the development of the region of Zugdidi, Ganmukhuri and Anaklia.
27. Project considers construction of 4 structures of underwater breakwaters (composed with 5t tetrapods) in the sea along the coastal line in around 200 m far from the beach and nourishment of the beach line with sand.

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28. The contractor for the Phase 2 was the same as for the Anaklia Coastal Improvement phase 1 - Modern Business Group LLC (Azerbaijan). Construction started on 18th February 2015. Project considered construction of 4 structures of underwater breakwaters (composed with 5t tetrapods) in the sea along the coastal line in around 200 m far from the beach and nourishment of the beach line with sand. According to the Contractor's schedule (agreed with MDF), construction started with N10 underwater breakwater. The nourishment of the 300 m beach line is completed. This section was priority for the government to place the sand because of children's camp located in the same area and having high intensity of beach line erosion. N10 underwater breakwater was completed in September, 2015. First observations reported by Engineer Dohwa show that protection provided by the breakwater is visible, particularly in case of storm.
29. Official completion time for Phase 2 was determined 18 November, 2015. Contractor, Engineer and MDF agreed to extend the civil works contract and signed Contract Amendment for time extension till 30 April, 2016.
30. The Georgian government came to a decision to initiate construction of a deep sea port in Anaklia. In March 2016 the Ministry of Economy and Sustainable Development of Georgia provided MDF with the coordinates of the deep sea port, which demonstrated that the port was overlapping three breakwaters out of four (breakwaters N 7, 8 and 9). As a result MDF took decision to remove three breakwaters from the scope of work of the present contract. MDF Supervisory Board in April 2016 decided to cancel construction works for the proposed underwater breakwaters from the Contract through contract modification.
31. Phase II finally includes construction of only N10 underwater breakwater and placing of sand on the beach behind the N10 underwater breakwater (Approximately in front of Children's camp). After reducing the volumes of works the final Contract Price decreased from GEL 12,252,937.48 to GEL 5,264,147.71. The works were completed on 30 April, 2016 and Taking-Over Certificate was signed on 11 August, 2016. Following the Decree 24-05 dated 16 September 2016 on Anaklia Coastal Protection project (Phase II) issued by Public Law Legal Entity Technical and Construction and Supervision Agency (under the Ministry of Economy and Sustainable Development of Georgia) the constructed facility (underwater breakwater N10) was taken into exploitation.
32. MDF and Engineer agreed to shift Item for demobilization works and removing of sheet piles and jetty from Phase II work scope to the Phase I work scope.
33. The contractor for the Phase 2 was the same as for the Anaklia Coastal Improvement phase 1 - Modern Business Group LLC (Azerbaijan). Civil works contract was signed with Modern Business Group LLC (Azerbaijan) on September 26, 2014 with an amount of GEL 12,252,937.48 (approximately USD 7.0 million). The construction works started on February 18, 2015. Official completion time for Phase 2 was determined 18 November, 2015. Significant delays have been experienced in the implementation of the project. Contractor, Engineer and MDF agreed to extend the civil works contract and signed Contract Amendment for time extension till 30 April, 2016.
34. In April 2016MDF's Supervisory Board decided **to cancel construction works** for the proposed underwater breakwaters from the Contract through contract modification.

1.2 Construction activities and project progress during the reporting period

Anaklia Coastal improvement (phase 2) Project -Civil works - N/A

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Tbilisi-Rustavi urban link (Section 2):

35. Construction Contractor of the project, as it was mentioned above, is SEZA Inshaat (Turkey). Commencement date defined by SC - Dohwa Engineering Co.LTd, is February, 28, 2017.
36. MDF has granted limited site access to the Contractor at sections to be handed over under Phase I. In particular, access was given for KM 4+000-5+100 and KM 8+600-10+750. MDF required from the SC to ensure that Contractor has not carried out any construction activities besides survey works, until obtaining the Engineers "No Objection".
37. During the reporting period, the following construction activities have been carried out under the project, at permissible sections:
 - Excavation of rocky and soft soil at km 4+000 to 4+500 continued on a river bank side, at Marabda restaurant is completed – in total 90,305.413m³ of rock and 313,447.871m³ of soft soil were cut on the Main Road axis;
 - Continued delivery of material from borrow pit for construction of embankment fill – 242,809m³ of soil;
 - Commenced and continued construction of tunnel at km 4+620 – excavation of soil and reinforced concrete casting for slab and walls. U-type section 234.73 meters are constructed and floor slab of box-type section is commenced – around 40 meters are casted;
 - Started and completed construction of retaining wall section at PK 4+600 to PK 4+890 – 1139.5m³ of reinforced concrete;
 - Continued construction of bridge at PK 9+840 – construction of one pair of Abutments, including wing walls is completed, construction of bored piles for second section of the bridge is ongoing. 905.6 m³ of concrete is already placed;
 - Continued earthworks for the ramps of Interchange – km 9+840. Unsuitable weak soil was replaced with granular material delivered from borrow pit;
 - Constructed temporary diversion asphalt road at Interchange – km 9+840. It will allow continuing construction of the second section of the bridge at PK 9+840, located on a main axis of the road. The total area of asphalt pavement for the temporary road equals – 14,103.5 m² of 10 cm thickness binder course;
 - Continued earthworks for the main Road - km 8 to 10. The most of soil on a depth around 50 – 60 cm was completely unacceptable for road construction and was replaced with granular material;
 - Commenced placement of sub base layer for road pavement at km 8/10 – 1,811 m³;
 - Commenced and continued construction of 44 m box culvert at 10+300 – 33 linear meters are constructed.

Site clearance

- The current working areas of the Project Phase I are cleaned from bushes and trees, preparation of shop drawings for the coming activities is ongoing.

Earthworks

- The earthworks were conducted at two locations – km 4/5 and km 8/10.
- **Km 4/5 Right and Left Hand Sides.** At the start point of the Project the Contractor completed excavation of rocky soils. Most of this material was used for backfilling of excavated areas at km 8 to 10. After completion of excavation of rocky soil at restaurant Marabda area, the Contractor has shifted his equipment to continue excavation of rocky soil on a lower level on the same change. Currently the Contractor excavates rocky material for extension of tunnel at km 4+600. Most of excavated from km 4+600 material was a rock. In order to save this suitable material for construction of road's embankment, the Contractor dumped all excavated material at Krtsanisi park area –

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replacement of weak material. But after completion of the soil replacement, all surplus material had to be transported at the new area – for this purpose the Contractor has requested the Employer's permit to open a new front of works.

- **Km 8/10.** The Contractor conducted earthworks for road embankment, ramps and local roads at Interchange area (Krtsanisi Park, km 10) and right hand side from km 9 to the end point of the Project. Already constructed bottom layers of the Ramps are covered by asphalt paving and are using now for temporary diversion of the traffic flow, while construction of the second part of the Bridge at km 9+840 concrete elements.

Bridges and overpasses

- The Contractor resumed construction of the second part of the bridge at 9+840 – drilling and casting of piles.

Retaining wall and Tunnels.

- Construction of retaining wall is completed at PK 4+600 to PK 4+980. During the reporting period, the Contractor has demonstrated some progress in construction of the Tunnel at km 4+620 (U-type and box-type sections).

Utilities Relocation

- During the reporting period, the Contractor has carried out relocation works at three section –Phase I start point, Phase I middle point – active works and Phase II site investigation.

Main Summary Progress						
Row	Description of main activities	% W.F.	Progress	Cumulative progress till December	Cumulative progress for November	Progress in December
1	A. BILL No 1. GENERAL ITEMS	2,94%	Actual	91,01%	90,33%	0,68%
			Planned	90,88%	90,23%	0,65%
2	BILL No 200. Setting Out and Site Clearance	4,43%	Actual	104,90%	101,42%	3,48%
			Planned	73,70%	72,06%	1,64%
3	BILL No 300. EARTHWORKS	17,88%	Actual	51,82%	48,59%	3,23%
			Planned	52,42%	43,67%	8,75%
4	BILL No 400. CULVERTS AND DRAINAGE	7,56%	Actual	3,38%	3,38%	0,00%
			Planned	28,97%	19,25%	9,72%
5	BILL No 500. BRIDGES AND OVERPASSES	4,58%	Actual	12,42%	7,53%	4,89%
			Planned	35,87%	27,64%	8,23%
6	BILL No 600. RETAINING WALLS, CULVERTS FOR RURAL ROADS	34,20%	Actual	17,32%	15,68%	1,64%
			Planned	35,73%	27,72%	8,01%
7	BILL No 7. ROAD PAVEMENT	19,83%	Actual	3,15%	3,15%	0,00%
			Planned	14,14%	8,00%	6,14%
8		0,49%	Actual	0,00%	0,00%	0,00%

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	BILL No 8.ROAD FURNITURE		Planned	0,00%	0,00%	0,00%
9	BILL No 9.RELOCATION OF UTILITIES	5,25%	Actual	37,90%	36,15%	1,75%
			Planned	38,16%	32,32%	5,84%
10	BILL No 10.GREENERY	0,19%	Actual	0,00%	0,00%	0,00%
			Planned	0,00%	0,00%	0,00%
11	BILL No 11. NOISE MITIGATION MEASURES	1,03%	Actual	0,00%	0,00%	0,00%
			Planned	0,00%	0,00%	0,00%
12	BILL No 12. BUILDING REINFORCEMENT AND SPEED CONTROL FACILITY	0,05%	Actual	0,00%	0,00%	0,00%
			Planned	0,00%	0,00%	0,00%
13	BILL No 13. Construction of Recreational Zone for Urban Road	0,27%	Actual	0,00%	0,00%	0,00%
			Planned	0,00%	0,00%	0,00%
14	BILL No 14. Arrangement of Outside Lighting System	0,91%	Actual	0,00%	0,00%	0,00%
			Planned	0,00%	0,00%	0,00%
8	C. DAYWORKS OF (B)	0,39%	Actual	4,77%	4,77%	0,00%
			Planned	30,00%	25,00%	5,00%
Overall progress of the project		100,00 %	Actual	26,0%	24,3%	1,6%
			Planned	35,8%	28,7%	7,0%

1.3 Changes in project organization and environmental management team

38. The MDF is the projects' executing, implementing and disbursing agency. MDF has overall responsibility for the projects' management - including environmental, planning and supervision. New Executive Director of MDF Galaktion Buadze was assigned on November 30, 2016 by the Georgian Prime Minister's Decree.
39. MDF is responsible for general implementation of all safeguards tasks and guarantee that potential adverse environmental impacts arising from the Projects are minimized by implementing mitigation measures presented in the Initial Environmental Examination (IEE) or SSEMP, as applicable.
40. Management of safeguards issues is carried out by the MDF through Environmental and Resettlement Unit, established in October 2014. From that time, number of Environmental and Resettlement team members has increased from 6 to 12 and currently consists of: Head of Unit (Former Head of the Unit - Giga Gvelesiani has left his position in November, 2017 and currently, Elguja Kvantchilashvili is appointed, as an acting Head), 4 environmental safeguards specialists, one social and gender specialist, 4 resettlement

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specialists. There are also two ADB's individual Consultants – one on environmental safeguards and one on resettlement issues, who are the members of Environmental and Resettlement Unit. Until October 2014, Environmental and resettlement safeguards team was consisting of 3 environmental safeguards and 2 resettlement specialists, one of which was the ADB's national consultant on resettlement issues. Environmental and Social Safeguards team had a Team Leader who was an advisor to Executive Director of MDF on environmental and social safeguards issues.

41. The Environmental and Resettlement Unit is involved in addressing of environmental and social safeguard issues throughout the entire projects' cycles. The Environmental and Social Specialists of the MDF, are responsible for management of the environmental and social aspects associated with development of all donor funded projects for which MDF is the responsible Executing Agency (EA). Local Environmental Consultant –Nino Nadashvili, was recruited in September 2015, and designated to supervise ADB projects, review the IEEs/EIAs, EMPs, and SSEMPs of projects and carry out supervision of the construction performance based on approved EMPs, IEEs/EIAs, and environmental standards in accordance with ADB "Safeguard Policy Statement" (2009) requirements' and acting Georgian Legislation.

1.4 Relationships with contractors, owner, lender, etc

Tbilisi-Rustavi urban link (Section 2)

42. Construction Contractor is 'Seza Insaat- Turkish Company. EPCM consultant JV "Dohwa Engineering Ltd" (Korea).
43. The main institutions involved in IEEs/EMPs/SSEMPs implementation and monitoring, are the executing agency (EA) - MDF, the Supervision Consultant (SC), the Construction Contractor and to a lesser extent the Ministry of Environmental and Natural Resources Protection and Municipal Authorities. EA (MDF) and SC are responsible for ensuring monitoring of the project implementation at the construction stage. Ministry of Environmental and Natural Resources Protection has the authority for periodic audits but should not be considered as a party responsible for monitoring according to the SSEMP.
44. As it was mentioned above, MDF is responsible for general implementation of all safeguards tasks. EA (MDF) and SC (DOHWA) are responsible for ensuring monitoring of the project implementation at the construction stage, while Tbilisi City Hall and Road Department of the Ministry of Infrastructure and Regional Development at the road operation stage.
45. MDF ensures availability of all environmental information and facilitates environmental supervision of the project. The MDF's local environmental specialist's responsibilities in respect of implementation of the IEE/SSEMP, are to: ensure that all relevant IEE/SSEMP requirements (including environmental designs and mitigation measures) are duly incorporated into the project bidding documents; Assist Contractors to obtain necessary permits and/or clearance, as required, from any relevant government agencies (NEA, etc); Ensure that all necessary regulatory clearances are obtained before commencing any civil work on the project; Ensure, that contractors have access to the EMP and IEE report and understand their responsibilities to mitigate environmental problems associated with their construction activities and facilitate training of their staff in implementation of the EMP; Approve the Site-Specific Environmental Management Plan (SEMP) prepared by the Contractor before he takes possession of construction site; Time-to time monitor the contractor's implementation of the SEMP in accordance with the environmental monitoring plan by conducting site monitoring visits.

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46. The MDF through its Local Environmental Consultant-Nino Nadashvili, reports to the ADB in every 6 months on the status of environmental compliance of construction works by preparing semi-annual Environmental Monitoring Reports. In case unpredicted environmental impacts occur during the project implementation, prepares and implement as necessary an environmental emergency program in consultation with relevant government agencies and ADB.
47. The supervisor company (SC) of works commissioned by MDF is responsible to establish strong field presence in the Project area and keep a close eye on the course of works. Construction Supervision Company is responsible for supervision of all environmental issues during project implementation. Along with ensuring consistency with the design and ensuring quality of works, the supervisor is mandated to track implementation of EMP/SSEMP by the Construction Contractor and reveal any deviations from the prescribed actions.
48. Environmental issues at Supervision Company DOHWA are managed by national environmental specialist Paata Chankotadze, who is responsible for:
 - Reviewing and approval of environmental documentation, submitted by contractor;
 - Preparing quarterly progress reports;
 - Monitoring of construction activities, issuing NCNs;
 - Relationship with contractor and employer;
 - Support of contractor in obtaining of environmental permits and licenses;
 - Correspondence with Employer, contractor and local authorities.
49. Environmental specialist of technical supervisor should assess how accurate is the factual information provided in the contractor's reports, fill any gaps identified in them, and evaluate adequacy of mitigation measures applied by contractor. Technical supervisor must highlight any cases of non-compliance with EMP/SSEMPs, inform on any acute issues brought up by contractor or revealed by supervisor himself, and propose corrective actions.
50. During implementation of construction activities Engineer's environmental specialist time to time conducts environmental meetings and site inspections. In case of observation of significant non-compliances Engineer fills non-conformity report forms and sends them officially to Contractor. Most important issues, which cannot be managed by HSE department, are subject of review during weekly meetings. In case of emergency, contractor officially asks support of Employer, in the range of its competence, refers to relevant ministries and local authorities.
51. Thus, non-compliance notice has to be issued to the contractor if the SC requires action to be taken. The contractor is required to prepare a corrective action plan which needs to be implemented by a date agreed with the SC. Non-compliance should be ranked according to the established criteria.
52. SC company prepares quarterly progress reports, which cover the implementation of the SSEMP, discrepancies from the SSEMP and list all HSE relevant incidents and accidents that occur during the implementation; Submits periodic reports based on the monitoring data and laboratory analysis.
53. CC is obliged to follow EMP/SSEMP good construction practice during construction activities. In order to meet this obligation, Contractor has established environmental management team and procedures. The Contractor has contracted environmental consultancy company "GAMMA Consulting", responsible for environmental monitoring of construction activities and development of thematic reports required under EIA, IEE and ADB guidelines and Georgian legislation. 'GAMMA Consulting' will monitor construction

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activities during whole period of project implementation.

54. Construction Contractor (SEZA) has also appointed a full time Health, Safety and Environmental Manager (HS&EM) – Vladimer Melia, which is a senior member of the construction management team based on site, for the duration of the contract. The construction contractor's Environmental team responsible for implementation of EMP/SSEMP by daily environmental monitoring and reporting.
55. Key responsibilities of the environmental team of the CC are preparation of the Site-Specific Environmental Management Plan (SEMP) for approval by the Employer (EA), prior to the Contractors taking possession of the construction site; Ensure that the SSEMP is implemented effectively throughout the construction period; Carry out the monitoring and mitigation measures set forth in the IEE/EMP/SSEMP; Establish an operational system for managing environmental impacts; Allocate the budget required to ensure that such measures are carried out. Construction contractor is responsible to prepare monthly progress reports on SSEMP implementation, which should contain information on the main types of activities carried out during the reporting period, status of any clearances/permits/licenses which are required for carrying out such activities, mitigation measures applied, and any environmental issues that have emerged in relations with suppliers, local authorities, affected communities, etc.
56. The CC submits reports of the carrying out of such measures to the employer on a monthly basis; Coordinating community relations issues through acting as the Contractor's community relations focal point – Vladimer Melia (proactive community consultation, complaints investigation and grievance resolution), establishing and maintaining site records of:
 - Weekly site inspections using check-lists based on SEMP;
 - Environmental accidents/incidents including resolution activities;
 - Environmental monitoring data;
 - Non-compliance notifications issued by the SC;
 - Corrective action plans issued to the SC in response to non-compliance notices;
 - Community relations activities including maintaining complaints register/complaints log-book ;
 - Monitoring reports;
 - Routine reporting of SEMP compliance and community liaison activities;
 - Ad hoc reporting to the Employer's Engineer of environmental incidents/spillages including actions taken to resolve issues.
57. Information on environmental issues, arising from the construction activities should be immediately brought to the attention of MDF's national environmental Consultant and safeguards team by the environmental specialists of construction and Supervision Companies', in order to coordinate efforts and ensure immediate mitigation of impacts, protect the environment and safeguard the health and welfare of the local communities.
58. However, Progress reports of implemented activities, were presented by CC and SC with significant delays, were not corresponding above mentioned requirements so far. Information provided at reports were general and not systematized. Reports did not include details on supervision activities and not summarize the results of weekly and/or monthly monitoring.

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2 PART II. ENVIRONMENTAL MONITORING

59. An environmental assessment and review framework (EARF) for SUTIP 3 was approved by the government on 16 April 2010. EARF was updated in April, 2015. The environment classification for Tranche 3 is Environmental Category B. The subprojects under SUTIP 3 were classified as category B as the subprojects impacts are site specific and can be addressed through mitigation measures. Initial Environmental Examination (IEE) was required. The environmental categorization of sub-projects was conducted by using ADB's Safeguard Policy Statement (2009).
60. Environmental Assessment and Review Framework (EARF) is stated that an IEE/EMP will be a part of the overall project monitoring and supervision and will be implemented by the Contractor with oversight from the Supervision Consultant (the Engineer) and MDF. Initial Environmental Examination report was prepared for the project, which was approved by ADB in December, 2015.
61. According to Georgian Legislation, preparation of Environmental Impact Assessment (EIA) was required for the project also, in order to obtain the construction permit. Georgian version of the draft Environmental documentation was prepared and submitted to MOEPNR for consideration in December, 2016. Ecological Expertise N5 was issued on January 17, 2017, which was shared with all relevant authorities of MDF and CC and SC top management and environmental staff.
62. IEE/EMP is an integral part of construction contracts. MDF requires the Construction and its Supervision Companies to implement construction activities in accordance with the environmental management plan, according to which SSEMP was developed. Safeguards issues are monitored by the MDF's environmental and resettlement unit, with the support of the consulting services firms and the consultants recruited for the implementation of the safeguards plans.
63. Based on the EMP/SSEMP requirements, monitoring measures of projects includes construction site supervision, verification of permits, monitoring of compliance of the contractors' performance and specific monitoring of environmental impacts like noise, dust, soil contamination, landscape structure, construction waste, radiation, flora and fauna, water pollution, air emissions and etc. conducted by Contractor's and Engineer's environmental management specialists.
64. The objects of monitoring, the sampling points, techniques, frequency of measurements and, targets, as well as entity responsible for monitoring, as indicated in SSEMP, are described in **Annex 1**.
65. Environmental monitoring started immediately after the commencement of civil works. Environmental safeguards monitoring has being performed as required in the EMP/SSEMP. MDF submits to ADB semiannual environmental safeguards monitoring reports, describing progress of implementation of EMP/SSEMP and any compliance issues and corrective actions, within 1 month after each reporting period. If any unanticipated environmental and/or social risks and impacts will arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, MDF ensures to promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan.
66. During reporting period, environmental aspects, monitored and managed by construction and supervising companies within the project, are provided bellow. It should be noted that for the monitoring of air, noise, water and other parameters, during measurements, standards, provided by the Decree 297/N on "Approval of norms on environmental quality

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conditions” elaborated by the Minister of Labor, Health and Social Affairs of Georgia (16. 08. 2001) were used, as mentioned decree determines and approves quality norms of environmental conditions, in order to ensure the safe environment for human health and ADB standards.

Air quality

67. Operation of heavy machinery, vehicles and other construction equipment result in dust generation and fugitive emissions of carbon monoxide, NO_x, SO₂, hydrocarbons, and particulate matter. Main air pollution source during the preparatory phase of the project was related to generation of dust due to demolition activities. Weekly dust monitoring activities have been carried out by GAMMA Consulting on specially selected points in adjustment with residential areas. For the part 1 geographic coordinates of the selected monitoring point is 490832.66 E 4612052.25 N and for part 3 493462.84 E 4608738.09 N. results of the monitoring are shown in the Table 1:

Table 1: Dust Monitoring Results

Monitoring Point	Date	Dust Level (mg m ³)	Permissible limit (mg m ³)
PK 4+300	16.07.2017	1.1 mg/m ³	0.5
X;0490107, Y;4612222	22.08.2017	0.6 mg/m ³	0.5
X;0493324, Y;4608871	30.08.2017	0.5 mg/m ³	0.5
X;0493444, Y;4608535	08.09.2017	0.47 mg/m ³	0.5
X;0493598, Y;4608337	13.09.2017	0.05 mg/m ³	0.5
X;0493458, Y;4608719	21.09.2017	0.24 mg/m ³	0.5
X;0490382, Y;4612162	30.10.2017	0.2mg/m ³	0.5
X;0421750, Y;4651481	20.11.2017	0.39 mg/m ³	0.5
X;0421745, Y;4651486	15.12.2017	0.18 mg/m ³	0.5

Source of standard: statement 297n on Approval of the norms of qualitative status of the environment

68. Impact of the construction activities on air quality is not high and is manageable through application of good construction and vehicle/equipment maintenance practices. It is not possible to eliminate the emission of dust from a construction sites entirely. Nevertheless, to minimize dust following mitigation measures are being taken:

- Water spraying inside and around the construction sites;
- Using of only such vehicles and equipment that are registered, have necessary permits and maintained with relevant standards;
- Storages of construction materials are located far from residential areas;
- During the transportation of construction materials trucks are covered with special tarpaulins or other cover means to avoid spreading of fine aggregated material in the air;
- The transportation of materials are carried out by initially selected and determined routes and the speed of the trucks are limited;
- Wheels and undercarriage of haul trucks cleaned and washed prior to leaving construction site.
- Project construction and supervision contractors have implemented monthly monitoring of dust generation due to construction activities. The level of dust in air was varying between 0,05-1.1 mg/m³. Exceeding the concentration of dust was inevitable during excavation of slope at PK 40.2, but impact was short-term and dusty activities have been completed in August 2017. Particular care will be taken for summer 2018 to avoid exceedances. In case of exceedance of dust concentration construction activities will be stopped.

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Noise and Vibration

69. It is not possible to eliminate the emission of noise (noise produced by various equipment and activities) entirely from a construction sites, however, mitigation measures like usage of vehicles and equipment that are registered and have necessary permits, no noisy construction activities during the nights, usage of silencers, mufflers and acoustic shields on equipment, limitation of the number of machines used one and the same time, using vibration absorbing handles or rubber-type vibration insulating devices between the tool and the hands implemented by the contractor, using hearing protection for workers, fixing 'out-of-balance' items reduces noise levels to a moderate magnitude.
70. Project construction and supervision contractors have implemented monthly monitoring of noise due to construction activities. Monthly noise monitoring activities have been carried out by GAMMA Consulting on specially selected points in adjustment with residential areas. For the part 1 geographic coordinates of the selected monitoring point is 490832.66 E 4612052.25 N and for part 3 493462.84 E 4608738.09 N. results of the monitoring are shown in the Table 2. According to data received in July-December 2017 period the obtained results sometimes were not within the National Environmental and IFC/WB Standards (Maximum Permissible Level). In such cases the Contractor was instructed to reduce quantity of heavy equipment, working in same place and maintain mufflers of trucks, dozers and caterpillars.. All measurements were carried out during the day time from 11 AM to 15.00PM.

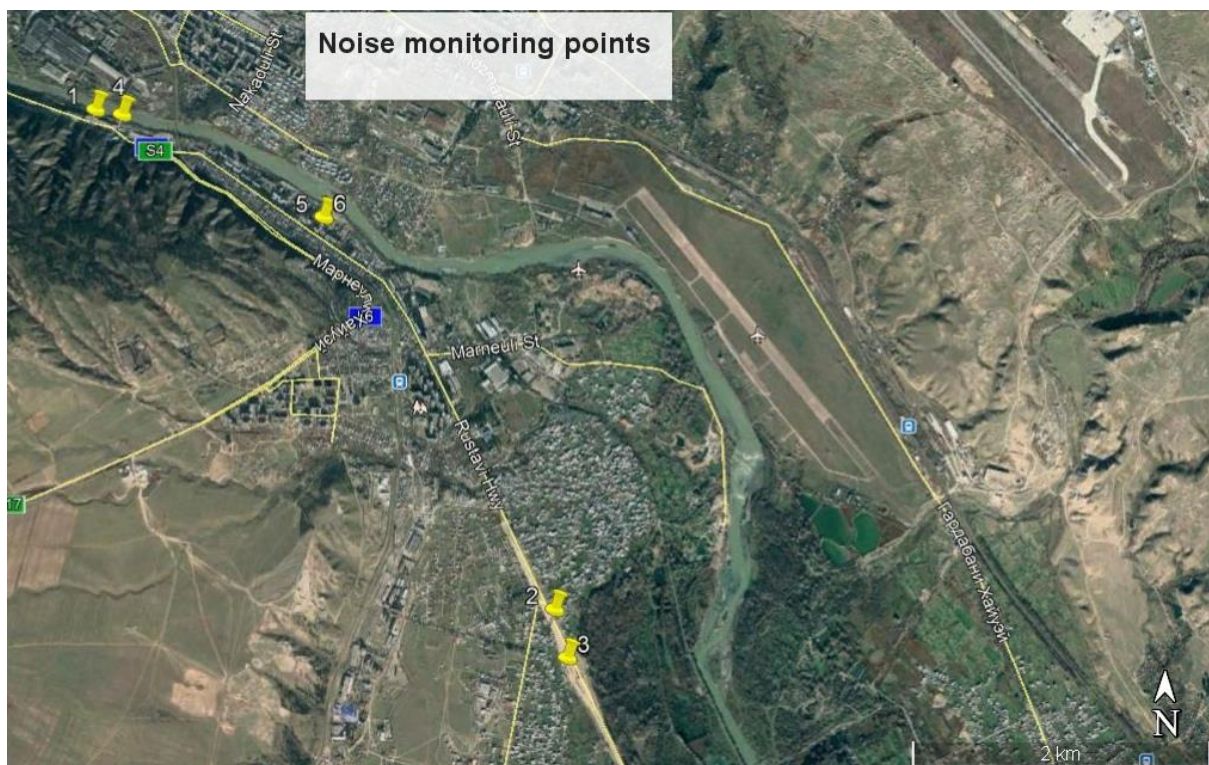


Table 2: Noise Monitoring Results

Monitoring Point	Date	Noise Level (dbA)	Permissible Level (dba)-day time
X; 0490203, Y; 4612193	16.07.2017	74dBA	55 (65*)
X;0493324, Y;4608871	15.08.2017	71dBA	
X;0493412, Y;4608547	08.09.2017	67dBA	

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X;0490382, Y;4612162	27.10.2017	75dBA	
X;0491750, Y;4611481	20.11.2017	59 dBA	
X;0491745, Y;4611486	15.12.2017	53 dBA	

*Note. The equivalent and maximum sound levels (dB) for the noise originating in the area due to the car and railway traffic, distanced from the construction isolating the first echelon of sound-protected residential houses, hotels, hostels by 2 m, directed towards the common city and regional mains and railway, is admitted to be 10 dB more (precision = +10 dB; see values in brackets) than the basic admissible value.

71. Mentioned monitoring locations are at the construction site. Measurements were made in 300 m distance from the populated area. Permissible noise level at construction sites is 85 dba. In such cases workers are given ear protections.

72. During preconstruction survey, conducted by the consulting company “Ecotech Ltd” in August 2013, the background noise was measured along the design road in close vicinity with the apartment buildings (Site1 - km5+300, Site 2 - km5+800; and Site 3 - km6+600) – and at the Site 4 km 8+200 near the existing road – (3m). The average noise level amounted to:

Site 1 - 62 dB
Site 2 – 60dB
Site 3 – 63dB
Site 4 – 65dB.

73. As, it can be concluded, according to baseline data, the average noise level was higher in comparison with standards. So, noise measured during the reporting period at receptor locations was below baseline levels.

Topsoil and subsoil

74. Top soil removal was conducted in accordance with the top soil management plan developed by Construction Company (June 10, 2017) and was approved by Dohwa.

75. Contractor minimizes usage of productive agricultural land and after completion of civil works will convert them to their original state. Embankments are monitored during construction for signs of erosion; grass has already been grown on the top soil stockpiles and they are protected from erosion. The storage of topsoil in stockpiles is conducted with relevant procedures and standards: no more than 2m high with side slopes at a maximum angle of 45°. The topsoil is segregated from subsoil stockpiles. Special, separated storage area is allocated for the top soil storing to prevent the stockpiles being compacted by vehicle movements or contaminated by other materials. The area is protected from potential flooding. (Photos are provided at Annex 3). Topsoil stockpiles are monitored and in case of any adverse conditions be identified corrective actions will be taken.

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76. The storage and monitoring of subsoil in stockpiles is conducted with relevant procedures and standards.

Soil Contamination

77. Inspection of vehicles is carried out to ensure that there is no leakage of fuel and lubricating materials into the soil. Contractor is ensuring the proper handling and storage of lubricants, fuel and solvents to prevent any leakage of these materials into the soil. All tanks are placed in a bund according with relevant procedures and standards. Equipment and storages is isolated and guarded. The Contractor conducts monthly monitoring of condition of all vehicles, working on site (see example of monitoring checklist below).

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KAMYON DENETİM FORMU		თვითმვლელი													
Modernization of Tbilisi-Rustavi Section of the Tbilisi-Red Bridge (Azerbaijani Border) Road															
ARAÇ KAYIT BİLGİLERİ															
Firma / ფირმა	SEZA	Plaka No / Model ნომერი / მოდელი										14-801-A1		7	
Marka - Tip / ტიპი	HOWO	Seri No / სერიული ნომერი													
Malzeme Adı / ჩამონათვლის დასახელება	1.GÜN/დღე		2.GÜN/დღე		3.GÜN/დღე		4.GÜN/დღე		5.GÜN/დღე		6.GÜN/დღე		7.GÜN/დღე		
	E*	H*	E*	H*	E*	H*	E*	H*	E*	H*	E*	H*	E*	H*	
1 ARACIN DIŞ GÖRÜNÜŞÜ / გარე ზეზიდულება	✓		✓		✓		✓		✓		✓		✓		
2 Boyunluk / სიგრძე	6		6		6		6		6		6		6		
3 SAĞ VE SOL ÖN FAR / მარჯვენა და მარცხენა ფარები	✓		✓		✓		✓		✓		✓		✓		
4 SAĞ VE SOL SİNYAL / მარჯვენა და მარცხენა ციგემა	✓		✓		✓		✓		✓		✓		✓		
5 ÖN SAĞ VE SOL SİS FARI / ტუმანაღები	✓		✓		✓		✓		✓		✓		✓		
6 Geri vites Sesli İkaz / ეკუსტელის გამაფრთხილებელი სიგნალი		✓		✓		✓		✓		✓		✓		✓	
7 ARKA SAĞ VE SOL STOP / უკანა სტოპები	✓		✓		✓		✓		✓		✓		✓		
8 YAKIT-YAĞ VE DİĞER GÖSTERGELER / საწვავის და ზეთის მაჩვენებლები	✓		✓		✓		✓		✓		✓		✓		
9 Silecekler / მუშის საწმენდები		✓		✓		✓		✓		✓		✓		✓	
10 Aynalar / სარკეები	✓		✓		✓		✓		✓		✓		✓		
11 Klima - İstima / გამათბობელი	✓		✓		✓		✓		✓		✓		✓		
12 KORNLA / სიგნალი	✓		✓		✓		✓		✓		✓		✓		
13 EMNİYET KEMERLERİ / უსაფრთხოების დავალები	✓		✓		✓		✓		✓		✓		✓		
14 Son Bakım Tarihi / ბოლო ტექ. დანაშტრების თარიღი	20.08.2017														
15 Sürücü İzin Belgesi / მძღვრატორის მოწმობა	✓		✓		✓		✓		✓		✓		✓		
16 İlk Yardım Çantası / პირველადი დახმარების ჩანთა		✓		✓		✓		✓		✓		✓		✓	
17 El Tipi Fener / ხელის ფანარი		✓		✓		✓		✓		✓		✓		✓	
18 Yangın söndürücü / ცეცხლსაქერი		✓		✓		✓		✓		✓		✓		✓	
19 Çekme Halatı / ბუცხარი		✓		✓		✓		✓		✓		✓		✓	
20 Lastik Basınç Ölçer / საბურავების წნევის საზომი	9		9		9		9		9		9		9		
21 Lastik Pompası/Kompresör / საბ. დახმარების პომპა		✓		✓		✓		✓		✓		✓		✓	
22 Aletler (İngiliz anahtarı,Kerpeten, Tornavida) / ხელსაწყოების კეითი		✓		✓		✓		✓		✓		✓		✓	
23 YEDEK LASTİK / სათადარიგო საბურავი		✓		✓		✓		✓		✓		✓		✓	
24 Diğer / სხვა		✓		✓		✓		✓		✓		✓		✓	
<input type="checkbox"/> Araçta tespit ettiğiniz uygunsuzlukları belirtiniz / მოულოდულო აღმოჩენილი დაზიანებები															
OPERATÖR / მძღვრატორი															
ADI, SOYADI / გვარი, სახელი		ŞİRKET - ÖN VANI / ფირმა-თანამდებობა				TARİH / თარიღი				İMZA / ხელმოწერა					
m.ih. hgbndj		SEZA				22.09.2017				m.ih.					
ARACI DENETLEYEN / შემოწმებელი															
ADI, SOYADI / გვარი, სახელი		ŞİRKET - ÖN VANI / ფირმა-თანამდებობა				TARİH / თარიღი				İMZA / ხელმოწერა					
m.ih. hgbndj		HSE OFFICER				29.09.2017				m.ih.					

Example of vehicle monitoring checklist

78. Refueling process is made according to established standards and procedures.

Flora and Fauna

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79. In Part 1 and in urban area of Part 3 of the road section II flora and fauna values are very low. The only sensitive zone within project area is Krtsanisi Forest Park, which is located in non-urban area of Part 3 of the road section II.
80. For the protection of the sensitive habitats and endangered flora and fauna species within project area, following actions are implemented:
- Exact demarcation of felling trees (to exclude cutting of other trees);
 - Each tree subject for felling is marked, measured and described and the tree felling program agreed with the Tbilisi City Hall (Environmental Services), as well as Gardabani municipality
 - The red data species (*Juglans regia*, *Ulmus minor*, *Quercus pedunculiflora*) extraction within the municipal land plots is agreed with the Tbilisi City Hall, Gardabani municipality and Ministry of Environment and Natural Resources Protection.
 - Felling of the common species of trees not included in the red data list is conducted in accordance with the Law of Georgia “On special protection of green plantations and state forest fund within the boundaries of Tbilisi and its environs” (2000, as amended in 2015).
 - The process of extraction of the red list trees is proceeding according to special procedures and agreement with the MoENRP, determined by the law of Georgia on “the Structure, Incumbency and Rule of Conduct of the Government of Georgia”.
 - Survey has been conducted to confirm the absence of nests of protected bird species within the limits of the construction corridor.
 - Survey has been conducted to confirm the absence of the bat colonies in the tree hollows to be cut down.
81. During project implementation some temporary disturbance to a range of common urban fauna species (mostly birds) will occur, but the impacts are unlikely to be significant and vegetation has now largely been removed, outside of the bird breeding season, thus avoiding impacts.
82. Limitation of the dust and emissions from construction machinery/vehicles -vehicle transportation monitoring and carrying out the watering of area - especially, near street trees and the parkland/green recreation area in the Krtsanisi Forest Park are used to control and reduce risks and hazards.

Water resource and River Mtkvari

83. The principal source of construction impacts on water is related to the r. Mtkvari. As the project implementation activities especially for Part 1 of the road section II located near the r. Mtkvari it is high risk of contamination of surface water. To avoid/minimize negative impact on the r. Mtkvari Constriction Contractor follows all instructions outlined in EIA/IEE/SSEMP during all phases of project implementation. Also, emergency response plan, which was approved by the MoENRP contains the chapter about avoidance of contamination of river Mtkvari and mitigation measures in case of possible spills.
84. No activities were implemented in the river during reporting period. Just some construction activities for making basement of retaining wall, which length in this section is 130 m was carrying out, near river bank, by end of June. Special attention was paid to operation of vehicles near the river, through inspection of vehicles to ensure that there is no leakage of fuel and lubricating materials. The Construction Company is limiting storage of lubricants, fuel and solvents adjacent to r. Mtkvari. All construction activities near the riverbed are planned during the low water season and out of spawning period.
85. Riv. Mtkvari water quality measurement was carried out in August and December 2017 by consulting company “Gamma”.

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Table 3

Monitoring Point	Date	TSS, mg/l		TPH, mg/l	
		Measured	Permissible	Measured	Permissible*
PK 4.40	18.08.2017	18.0	N/A	0.28	0.3
100 m upstream from PK 4.40	27.12.2017	26.0		<0.04	
PK 4.40	27.12.2017	22.0		<0.04	

*source: statement N425 on Approval of Technical Regulations for Protection of Surface Water Pollution of Georgia, dated 31.12.2013

Cultural heritage

86. During preconstruction survey of phase 2, conducted by the Contractor, at KP 5.400 has been observed old stone wall. Information has been immediately sent to the Ministry of Monument Protection. According Ministry`s written instruction, existing structure could represent old cowshed and should be researched by archeologists. On December 2018 the Contractor was instructed by the Engineer to hire qualified archeologists and conduct all needed surveys before starting of construction activities of phase 2.

Hazardous and Non-hazardous Waste

87. Constructions works generate different type of wastes starting from garbage, recycle waste, household waste and construction and demolition debris, including, hazardous wastes generated mainly from the vehicle maintenance activities (liquid fuels, lubricants, hydraulic oils, chemicals and etc.) and demolishing of buildings (asbestos).
88. The most significant solid waste from the project is the construction and demolition debris, followed by spoil from excavations, which is removed from site by an approved waste management contractor.
89. In October, 2017 Construction Company has elaborated and submitted to the MoE Inventory of hazardous waste, generated during implementation of the Project. Waste management plan will be submitted to the Ministry immediately after approval of inventory.
90. Disposal of the hazardous waste also needs to be agreed with the MoENRP and local authorities and managed according to adopted waste management plan.
91. The Construction Company collects hydrocarbon wastes, including lube oils, for safe transport off-site for reuse, recycling, treatment or disposal at the temporary storage sites and further at the locations approved by MoENRP or pass it to the licensed operator, having environmental permit on operation of the hazardous wastes. For further management of hydrocarbon waste Construction Company is in the process of signing contract with licensed company.
92. The Construction Company has responsibility for the asbestos waste management. The certified company ("Datuni" Identification Number: 406032065) was hired by Construction Company for proper management and safe disposal of asbestos waste according to existing acting legislation and good international practices. Asbestos material was disposed on Marneuli landfill in accordance to the contract with Solid Waste Management Company of Georgia.

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Damage to existing infrastructure

93. The complete list of the utilities and infrastructure to be relocated or affected is developed.
94. The Construction Company is working closely with any utility company having their infrastructure located within the public right-of-way.
95. Before construction is started the Construction Company had notified the utility companies of the proposed work area and requested that they mark the location of any types of equipment in the area.
96. The Construction Company had established the position of existing services such as pipelines, sewers, surface water drains, cables for electricity and telephones, overhead lines and water mains, before starting any excavation or other work likely to damage them.
97. The Construction Company arranged liaison with the appropriate authorities, the moving of or alterations to services such as pipelines, power and telephone lines, water mains, sewers and surface water drains which the works affects.

Community safety and traffic disruption

98. Design and construction works are in compliance with the technical standards. Emergency Response plan was developed in April 2017 and approved by the Ministry of Environment and Natural Resources Protection.
99. Traffic Management Plan has been developed by Construction Contractor in December 2017 and was rejected by the Engineer. Updated document should be submitted by the Contractor before 20.01.2018.
100. To avoid/minimize traffic disruption traffic management schemes is applied. The Construction Company works in close cooperation with Road Department and Patrol Police Department to regulate traffic on the project site.
101. Road vehicles equipped with sound signals and light signals. Drivers are trained in safety operation standards. Parking place is arranged with relevant standards. Flagmen are provided with special uniforms and special footwear. Local community members are informed about planned and ongoing activities. Area is fenced and information signs are available to warn people. Detailed Information about conducted trainings and participants is provided in the Table 3 below.

Table 3: Information about conducted trainings and participants

TYPE OF EDUCATION/ TRAINING	FIRM	DIVISION	NUMBER OF PERSONNEL TAKING EDUCATION	REGISTRATI ON SYSTEM	DURATION	TIME
SITE INDUCTION	SEZA	EACH PERSONNEL JUST START WORKING	92	SITE INDUCTION CHECKLIST	2 hour	184
EDUCATION ON SAFE WELDING AND CUTTING	SEZA	GENERAL FIELD PERSONNEL	15	SIGNATURE FORM	1 hour	15

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EDUCATION ON SAFE WORKING WITH ELECTRICAL POWERTOOLS	SEZA	GENERAL FIELD PERSONNEL	25	SIGNATURE FORM	1.30 min	32,50
EDUCATION ON ELECTRICAL WORKS	SEZA	CAMP PERSONNEL	14	SIGNATURE FORM	1 hour	14
EDUCATION ON USAGE OF MOTOR VEHICLE	SEZA	GENERAL FIELD PERSONNEL	29	SIGNATURE FORM	30 min	14.30
DAILY JOB SPEECH/TOOL-BOX TALKS	SEZA	EACH PERSONNEL WORKING BY DAILY	13500	SIGNATURE FORM	5 min	1125
EDUCATION ON ENVIRONMENTAL ISSUES (waste man. Refueling, polution prevention, topsoil man. Oil spill resp). cevre	SEZA	GENERAL FIELD PERSONNEL	85	SIGNATURE FORM	1 hour	85
ACM collection transportation and disposal	SEZA	GENERAL FIELD PERSONNEL	14	SIGNATURE FORM	30 min	7
MEETING WITH LOCALS	SEZA	POPULATION NEARBY OLD FACTORY	30	SIGNATURE FORM	30 min	15
EDUCATION ON ANY DANGER OF FIRE	SEZA	GENERAL FIELD PERSONNEL OFFICE PERSONNEL	85	SIGNATURE FORM	30 min	42.30
DISMANTLING WORKS	SEZA	GENERAL FIELD PERSONNEL	20	SIGNATURE FORM	2 hour	40
SNAKES	SEZA	GENERAL FIELD PERSONNEL	85	SIGNATURE FORM	30 min	42.30

Occupational health and safety

102. The Construction Company is performing works in accordance with labor protection and safety requirements as well as industrial sanitation requirements. The Construction Company instructed the staff on safety measures prior to the commencement of works. Workers are using personal protection equipment. Warning signs are placed at the project area. The Contractor records all accidents, happened during implementation activities and

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implements all necessary measures to avoid the recurrence of the incident. 6 minor accidents have been recorded during reporting period.

Workers Camps

103. The workers camp is located in the same area, where located previous workers camp for the construction of section 1 and section 3 of the Tbilisi-Rustavi road. The impacts related to the construction and operation of the camp on environmental and social receptors could be summarized as very low. The construction camp is equipped with necessary infrastructure. Monitoring activities are implemented by Environmental Specialists on the daily basis.

3 PART III: ENVIRONMENTAL MANAGEMENT

3.1 The environmental management system (EMS), site-specific environmental management plan (SSEMP) and work plans

104. IEEs, including EMPs, are integral parts of the contracts and their implementation is mandatory for contactors. Contractor Company, as it was mentioned above, submits monthly progress reports to Supervisor Company "Dohwa" and MDF. Monthly report includes chapter on environmental performance. Consultant Company "Dohwa" prepares quarterly environmental reports and submits to MDF on progress of the environmental management plans.
105. Following the award of the contract and prior to construction commencing the Contractor has reviewed the EMP and developed this into a detailed Site-Specific Environmental Management Plan (SSEMP) that amplifies the conditions established in the EMP that are specific for the project, the tasks involved and schedule of construction activities. The SSEMP includes a matrix of mitigation measures corresponding to specific activities.
106. The draft version of SSEMP was prepared by the Contractor and sent to Supervision Consultant (SC) for endorsement on 10.04.2017. SSEMP has been further reviewed and commented for improvement by the MDF's Local Environmental Consultant and ADB International and Regional Environmental Consultants. It was approved by PIU/MDF in June 19, 2017.
107. Detailed information on management plans and their statuses for the reporting period is provided in the table 4 below:

Table 4: Status of Management Plans

No	Name of Management Plan	Preparing by/ Prepared by	Deadline for submission/ Date of preparation (status)	Agreed with/ Approved by
1	Pre-construction survey of flora and fauna within the RoW	Prepared by GAMMA Consulting	May 5, 2017	Approved by DOHWA and MDF
2	Emergency Response Plan	Prepared by GAMMA Consulting	April 5, 2017	Approved by DOHWA and MDF

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3	Waste Management Plan	Prepared by GAMMA Consulting	May 15, 2017	Approved by DOHWA and MDF
4	Top Soil Management Plan	Prepared by GAMMA Consulting	June 10, 2017	Approved by DOHWA and MDF
5	Communication plan with local people	Prepared by GAMMA Consulting	June 20, 2017	Approved by DOHWA and MDF
6	Traffic management plan; it shall include Community Safety and a Community Liaison Management Plan	Under the process of preparation	July 10, 2017	Submitted, rejected by Dohwa. Revised version will be submitted on 20.01.2018
7	Camp site management plan, layout plan of the work camp and sanitary facilities, including a description of wastewater treatment and disposal	Under the process of preparation	July 10, 2017	Approved by DOHWA and MDF
8	Cultural Heritage Management Plan	Under the process of preparation	July 10, 2017	Approved by DOHWA and MDF
9	Health and Safety Plan	Under the process of preparation	July 10, 2017	Approved by DOHWA and MDF
10	Tree felling and landscape management plan	Under the process of preparation	July 10, 2017	Approved by DOHWA and MDF
11	A method statement on the management of dust and noise from material transport (including construction of temporary noise barriers)	Under the process of preparation	July 10, 2017	Submitted, not approved yet
12	Vibration control management plan (building 2,3 and 4)	Under the process of preparation	July 10, 2017	Submitted, not approved

3.2 Site inspections and audits

108. Site supervision and inspections, as well as monitoring of compliance of construction activities are important aspects to ensure the proper implementation of EMP/SSEMP requirements. Environmental management team of Construction and Supervisor Companies carry out permanent supervision activities and monitoring of the project performance on regular bases.

109. The schedule of conducted audits and monitoring implemented by CC and SC environmental specialists, during the reporting period, is given in the Table 5, below:

Table 5: The schedule of conducted audits and monitoring during the reporting period

	Organization	Comments
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Site visits	Supervision Company (DOHWA)	Construction Company (Environmental Consultant GAMMA Consulting)	Construction Company (SEZA HS&E Manager)	
Site audit	July 3-7, 10-17, 17-21, 24-28, 31	July 3, 10, 21, 24, 31	July 3-7, 10-17, 17-21, 24-28, 31	MDF's representative-project monitoring specialist is permanently on site. Weekly meetings also are conducted in a regular base every Tuesday. MDF's Local environmental Consultant attends weekly meetings and conducts site-monitoring visits at list quarterly, and/or any time, in case of necessity, SEZA environmental Consultant Company (GAMMA Consulting) and OH&E Manager are attending weekly meetings and discussing pending environmental issues (Tree cutting permits, top soil removal and stockpile, waste management, reporting issues and etc) together with DOHWA and MDF's Managers, environmental consultant and Engineers.
Site audit	August 1-4, 7-11, 14-18, 21-25, 28-31	August 1, 7, 18, 25, 31	August 1-4, 7-11, 14-18, 21-25, 28-31	
Site audit	September 1, 4-8, 11-15, 18-22, 25-29	September 1, 8, 15, 18, 25	September 1, 4-8, 11-15, 18-22, 25-29	
Site audit	October 2-6, 9-13, 16-20, 23-27, 30-31	October 2,13, 20, 27, 30	October 2-6, 9-13, 16-20, 23-27, 30-31	
Site audit	November 1-3, 6-10, 13-17, 20-24, 27-30	November 3, 6, 17, 24, 30	November 1-3, 6-10, 13-17, 20-24, 27-30	
Site audit	December 1, 4-8, 11-15, 18-22, 25-29	December 1, 8, 15, 22, 25	December 1, 4-8, 11-15, 18-22, 25-29	

110. MDF's local environmental Consultant ensures that the Contractors - CC and SC understand what is to be done and how to rectify and address any environmental issues raised during project implementation process.
111. MDF's national environmental Consultant Nino Nadashvili regularly performs monitoring of ongoing activities with close cooperation with environmental specialists of SC and CC companies, by mailing them and by conducting the meetings and site monitoring visits.
112. HS&E Manager of the Construction Company – Vladimer Melia is permanently on site and implementing daily inspections of construction activities in regular base.
113. Local environmental consulting company "GAMMA Consulting" is contracted by Construction Company in February 2017 for the whole duration of the construction work. GAMMA Consulting conducts site-monitoring visits 2-3 times per week and monitors implementation of the EMP/SSEMP during construction activities. He prepares monthly reports and submits to DOHWA and MDF.
114. During site inspection, representatives of 'GAMMA Consulting' visits the areas, where construction activities are carried out, site monitoring check-lists are filled out every week and signed by SEZA HS&E manager and 'GAMMA Consulting' environmental monitoring specialist. The sample of one of the check-list's is provided as Annex 4.

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115. During monitoring visits the following items were monitored and checked:

- **Levels of dust** – Road construction corridor, the levels of dust weren't considered high as construction activities are in inception phase and Construction Company is watering the area during construction activities as it is recommended by SSEMP. Several cases were observed when dust was generated during demolition of buildings and transportation of demolished materials. Special instructions were given to workers and managers to water the area where demolition activities are ongoing during dry day periods and cover tracks, which are transporting demolished materials and removed soil.
- **Compliance of the maximum high speed limit of 15km/h**–In the work area, the vehicles were respecting the high speed limit;
- **Presence of abnormal smells** -No abnormal smell have been detected;
- **Proper waste management and cleaning of the work site** – Construction Company has developed waste management plans and is managing household waste generated on the campsite and hazardous waste especially asbestos produced during the demolition of buildings in line with waste management plan. Hazardous waste is collected in specially allocated area and in future will be passed to the licensed company (Sanitari LTD).
- **Affection to flora, fauna or historical heritage** -during the construction preparatory activities specialists of GAMMA Consulting have conducted pre-entry survey of phase 2 and 3 to assess impact on flora and fauna on adjacent territory. Tree inventory was carried out as a part of pre-entry survey. Tree Inventory reports were prepared and submitted to respected state agencies.
- **Topsoil removal and disposal** – As apart of construction preparatory activities top soil removal and disposal activities are in place in construction corridor. Construction Company is following topsoil management plan prepared by GAMMA Consulting and agreed with the Ministry of Environment and Natural Resources Protection of Georgia.
- **Cutting and disposal of trees** – Tree cutting process is implemented in line with permits obtained from Tbilisi municipality.

116. During of reporting period a series of meetings were held with CC and SC. Weekly meetings are conducted in a regular base every Tuesday. SEZA's environmental Consultant Company (GAMMA Consulting) and OH&E Manager, as well as Dohwa's env. Specialist – Paata Chankotadze are attending weekly meetings and discussing pending environmental issues (Tree cutting permits, top soil removal and stockpile, waste management, reporting issues and etc) together with MDF's Managers and national environmental consultant.

117. MDF monitors construction progress by attending the regular weekly meetings between the Supervision Company and the Construction Company. MDF's local environmental consultant is attending weekly meetings and requesting from the Engineer and Contractor strict and unconditional compliance with ADB requirements and Georgian legislation in terms of safety and safeguards.

3.3 Non - compliance notice and corrective actions

118. Identification of problematic issues and noncompliance notice during site inspections is the responsibility of Environmental Specialist of Supervision Consultant. During reporting period several site visits has been implemented by environmental specialists of

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Construction and Supervision Companies in order to check environmental conditions at the camp site.

119. In case of any deviations of EMP and SSEMP requirements corrective actions and mitigation measures are applied. All mitigation measures construction phase of SPs are implemented by construction contractors according to EMP and SSEMP.
120. According to information, provided by environmental specialist of SC, there were just simple deviations observed during reporting period. Deviations observed during civil works implemented within the reporting period, are as follows:

N of NCR	Date of submission	Description of Non-Compliance	Area	Corrective action required	Performance Date of Corrective actions
1	10.08.17	There was not concrete fencing around hazardous waste storage area and in case of accident oil products could poured out on ground	Construction camp	Installation of concrete fencing around hazardous waste storage area	22.08.2017
2	14.08.17	During excavation and transportation of spoil the Contractor`s vehicles and heavy equipment was producing dust	PK42-44, PK99+5-107+50	Covering of trucks, transporting loose materials and implementation all necessary mitigation measures, considered by SSEMP to reduce producing of dust	11.09.2017
3	14.08.17	Some workers, mostly truck drivers and foremen did not use PPE within construction corridor	Whole construction corridor	The Contractor should forbid entrance to construction corridor for workers, which are not equipped with PPE	22.08.2017
4	14.08.17	Oil barrels were disposed without drip trays in construction corridor	PK46	Dispose oil barrels in to the drip trays	22.08.2017
6	29.08.17	Household waste was irregularly disposed on construction sites	PK46	Dispose containers for hazardous and nonhazardous waste on all construction sites and collect waste in to the containers	04.09.2017
7	04.09.17	Polluted barrels and containers with hazardous materials were disposed directly on ground, without drip trays (SEZA`s subcontractor, Datuni LTD)	PK74	Dispose all barrels and containers with hazardous materials should be disposed in secondary containment devices	13.09.2017; 18.12.2017

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8	12.09.17	Polluted barrels and containers with hazardous materials were disposed directly on ground, without drip trays (drilling team)	PK43	Dispose all barrels and containers with hazardous materials should be disposed in secondary containment devices	21.09.2017
9	12.09.17	Deep boreholes on construction site were not fenced (drilling team)	PK43	Dispose barriers around deep boreholes	21.09.2017
10	12.09.17	Drilling equipment was leaking	PK43	Collect spilled oil and dispose it in accordance with waste management plan; Maintain broken equipment	21.09.2017
11	18.09.17	Containers with hazardous materials were disposed on ground, without secondary containment devices; Hazardous and non-hazardous waste were collecting in one container with sign "household waste"	PK43	Dispose containers with hazardous materials in drip trays; Separate hazardous and non-hazardous waste and dispose them in different, signed containers (waste bins)	21.09.2017
13	20.09.17	During working on height more, than 2 m workers did not use falling protective equipment; During site activities, conducting in such kind of environment, when noise level is over 80 Db, all workers did not use hearing protective equipment	PK46	Instruct foremen and workers to: Use falling protective equipment during working on height more, than 2 m; Use hearing protective equipment during site activities, conducting in such kind of environment, when noise level is over 80 Db	21.12.2017
14	20.09.17	Construction waste was irregularly disposed on site; Leaking equipment was disposed on site	PK47	Construction waste should be collected and temporarily disposed on site in accordance with SEMP requirements; Construction equipment should be kept in good technical condition; leaking equipment must be repaired, or disposed	26.09.2017

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				in special protected area for hazardous materials	
19	12.10.17	In spite of the Engineer`s instruction oil was still leaking from drilling equipment; most of workers and visitors did not wear PPE on site	PK46	Repair leaking equipment; instruct all workers to wear proper PPE; do not allow visitor to enter construction sites without PPE	19.12.2017

All NCRs, prepared by the Consultant have been closed during reporting period.

3.4. Consultation and Complaints

Grievance Redress Mechanism (GRM)

121. In order to provide a direct channel to the affected persons for approaching project authorities and have their grievance recorded and redressed in an appropriate time frame, Grievance Redress Mechanism was established with efforts of MDF.

122. Also, on June 26, meeting was held at MDF's office dedicated to briefing about the concept note of GRM for sub-contractors SC and CC. Training was conducted by ADB's RETA Consultants Nurjan Dzhumabaev and Ketevan Dgebuadze. Detailed information was provided about scope of the GRM and on how to differentiate grievances that can/should be handled by CC from grievances, that should be directed to the MDF. All attendants found provided information very helpful and informative.

123. Complaints' registration journal is created and available at construction site. The copy of journal with mobile numbers of relevant persons – Mr. Vladimer Melia, (Site HS&E Manager of Construction Company), to be addressed is placed at local Municipality as well. Complaints' from the local people, regarding the environmental safeguard issues in case of their disturbance and inconvenience, because of improper or inadequate implementation of EMP/SSEMP, can be accepted in both places. Complaints' would be registered in database system, assigning compliant number with date of receipt. Complaints' would be investigated and complainant would be informed about time frame in which the corrective action will be undertaken, in case if the raised problem is realistic. Thus every complain would be indicated in **Complaints Logbook**, and problems would be solved in accordance of rules and regulations under the control of the supervising site manager and DOHWA's local Environmental Specialist (Paata Chankotadze), and if necessary with involvement of MDF side as well.

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124. Grievances to be handled at the level of CC or SC include:
- Social concerns related to contractor activity;
 - Environmental management;
 - Community safety.
125. The issues listed below should not be included if the GRM for CC or SC and should be directed to MDF's safeguard Unit:
- land acquisition,
 - valuation,
 - compensation,
 - entitlements,
 - public consultations and meetings or delivery of information (e.g. results of environmental monitoring).
126. CC should maintain a grievance logbook at all sites and register queries / complaints / concerns (both written and verbal). A copy of logbook, together with status update on pending grievances, should be submitted, through SC, to MDF's SU on a bi-monthly basis. A summary report on grievances reported and closed by CC should be submitted to MDF and ADB as part of semi-annual EMR.
127. Information on grievances raised during reporting period is provided in the table 5 below:

Table 5: Status of Grievances

N	Grievance/Problem	Notification	Action	Result
SocialConcerns				
1.	Biuniat Isaev Mr. Biuniat was against of construction of box culvert in immediate vicinity of his own land plot (PK95)	07 July 2017	The Consultant and the Employer have prepared new design for discharging of storm water from PK90-107 and avoided construction of box culvert at PK95	Solved

128. No other complaints or grievances have been raised during reporting period.

Status of Complaints submitted to the CRP

129. On 14 March 2016, at least 81 residents of building 12 in the Ponichala area of the road section 2 of the Rustavi Highway forwarded a complaint to the Compliance Review Panel (CRP) through the Complaint Receiving Officer (CRO) of the Accountability Mechanism of the ADB's Board to authorize a full compliance review of the project. The complainants alleged that they were not properly consulted about the impact of the Project and the proposed mitigation measures. On 15 November 2016, based on compliance review, CRP issued a draft compliance review report to the complainants, the borrower, and ADB Management. ADB and ADF on 24 January 2017, provided their comments and responses to CPR's draft report as required in the report.

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130. During CRP's review of the first complaint an additional complaint was received on 10 November 2016 from 72 residents of the 5-storey building identified as 16 a/b, Rustavi Highway. This building is in close vicinity of building 12. Issues raised in the second complaint are also similar to those of the first. On 16 January 2017, the CRP concluded that the issues raised are similar and the second complaint can be consolidated with the first complaint.
131. On the 13 February 2017 CRP submitted its final report for the above project. The CRP found the project non-compliant with ADB's operational policies and procedures in six aspects: (i) noise impacts, (ii) vibration impact, (iii) impacts on vulnerable groups, (iv) impacts on water and river ecology, (v) consultations, and (vi) environment categorization of the project. The report found air quality impact compliant.
132. In order to bring the project back into compliance, and in response to the findings of the CRP report, ADB and ADF propose to undertake an integrated approach involving additional studies for noise impact, impact on the river ecology and iterative targeted consultations at the community level with a particular focus on the vulnerable. This approach will be instrumental in identifying suitable solutions that are technologically feasible, cost effective, and compliant with all relevant standards. Also, as required by ADB's Safeguard Policy Statement, consultations with communities must continue throughout the project, or if there are changes in the project. An action Plan is agreed as and the schedule of actions proposed is presented. ADB will share drafts of the additional studies with the CRP, as they become available to solicit CRP's feedback, prior to finalization of the results.
133. The Action Plan is to be implemented over a period of three (3) years, to be completed by June 2020. During this period, ADB and MDF will: (i) provide CRP with the final reports of the further studies, as stated in the Remedial Action Plan.
134. Implementation of the actions will be started upon the final approval of the CRP. ADB will communicate to MRDI/MDF upon approval of the proposed solution.
135. ADB and MDF have initiated activities that feed into the Action Plan to bring the project back into compliance. These activities are in the form of studies, surveys and researches. The findings of the studies, surveys and research, and impact on the buildings are presented and summarized as follows:
136. **Noise impacts:** The noise impacts of the project was studied as required by the World Health Organization (WHO) noise standards reflected in the World Bank's Environmental, Health, and Safety Guidelines (EHS Guidelines). As part of this study, a comprehensive baseline of the ambient noise was established, followed by modelling for noise levels in the construction and operation stages of the project at various times in the future, and under various scenarios involving different mitigation methods. For operation, the report suggested four options through which compliance with the WHO standards reflected in the EHS Guidelines can be achieved: (i) maximum of eight meter high noise wall (wall 1: 988m X 6 m and wall 2: 640m X 8m) and removal of five buildings (apartments 8, V, 12VG, 16A/B and hotel); (ii) maximum of nine meter high noise wall (wall 1: 1,120m X 6m, wall 2: 240m X 8m, and wall 3: 268m X 9m and removal of four buildings (apartments 8, V, 12VG and 16A/B); (iii) maximum of five meter noise wall (wall 1: 1,628m X 5m), improved road surface, and removal of four buildings (apartments 8, V, 12VG and 16A/B); and (iv) five meter noise wall (wall 1: 880m X 5m, and wall 2: 188m X 8m) with noise tunnel (length: 560m, width: 29.5m, and height: 5m). The report suggests during construction to provide temporary sound barriers in the areas of work.

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137. **Vibration impacts:** MDF completed the vibration impacts study in two stages. Through the first study, measurement of the natural frequencies of the core and voluntary additions of the buildings in the Ponichala area was made. In the second study, vibration modelling was then completed based on the measured natural frequencies and vibration impacts that may result from construction of different noise mitigation measures. The report concludes that based on the analysis, vibration impacts are lower than the thresholds assigned by the UNI 9916 (Italian Criteria for the measurement of vibrations and the assessment of their effects on buildings) or International Standard Organization (ISO) 4866 for residential buildings and their annexes. The report recommends to: (i) instruct the contractor to strictly follow, with legal liability, the construction method and equipment list, and respect the boundaries of the construction provided in the contract; (ii) reinforce the annexes based on the engineering design of reinforcement works required in the original study and included as part of the contract; and (iii) conduct technical monitoring of all buildings with community participation.
138. **Targeted Consultations:** MDF and ADB completed the consultations with vulnerable residents in Ponichala, in an effort to explore and identify possible mitigation measures. This effort has been led and coordinated by a Communication Specialist (Georgian National) engaged by MDF, under the close supervision of ADB. The consultations methodology proposed consisted of: (i) individual household interviews; (ii) targeted focus group discussions; and (iii) open public consultations at locations close to the affected people. People were consulted on the anticipated impacts in relation to the construction and operation phases of the Project as well as on the challenges of their current day to day lives, and on potential mitigation measures that emerged through the additional studies. The consultations were delayed from initially anticipated time line due to delays in approval of the methodology and non-availability of residents due to the summer holidays.
139. **Open public consultations:** MDF and ADB conducted a series of open public meetings with residents of all 9 buildings between 17 and 20 November 2017. Two public meetings were held with the people from 9 buildings and one meeting held with representatives of civil society organizations (CSOs). All technical studies were disclosed in advance. Full technical reports in English and summary reports in Georgian language were posted on MDF website on 10 November and 13 November 2017, respectively. The printed technical reports in both languages were shared with people ahead of the public meetings. The residents from all 9 buildings were invited to the public meetings in advance; those who were unavailable to join the meeting on 17 November 2017 were offered the opportunity to attend on 20 November 2017.
140. A total of 67 people participated in the three open public meetings - 39 attending on 17 November 2017 and 28 on the two meetings on 20 November 2017, respectively. CSOs that attended the public meeting include: Union of Blind, Friends of Earth/Green Movement, REC-Caucasus, and Green Alternative. Transportation was provided by MDF to take residents to the venue of the public meetings and bring them back to Ponichala.
141. **River Ecological Impacts:** A river ecology screening and impact assessment study was completed to investigate the ecological sensitivity of the river to the Project, assess the magnitude of impacts, and propose likely mitigation measures. The study was undertaken by qualified national and international experts. The report concludes that impacts from the Project on the Mtkvari river ecosystem will be very minor. However, the study does conclude that the Mtkvari River while degraded, is still considered to be a natural habitat. Therefore, to meet the requirements of ADB SPS 2009, the site specific environmental management plan (EMP) will be prepared with additional mitigation measures based on the findings and recommendations of the ecology report. Furthermore, to mitigate the

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minor residual impact on the natural habitat, habitat restoration will be undertaken along the river banks to create additional riparian areas with connection to adjacent parklands.

142. **Storm Water drainage:** The MDF through design engineer has revised the storm water drainage to protect the river water in case of traffic accidents. Contingency plans will be prepared in January 2018 as a part of the site specific environmental management plan, which will be prepared for this section.

3.5 Actions taken to reflect the findings of ADB mission during reporting period

143. A Loan Review Mission (the Mission) has visited Rustavi Project on 27 September 2017. The site monitoring visit was implemented by ADB's environmental specialist – Duncan Lang together with RETA International-Regional Environmental Consultant – Ketil Dgebuadze and MDF's Environmental Consultant Nino Nadashvili. They met with Contractors Seza Insaat Ltd and Supervision Consultants Dohwa Engineering's safeguards team. Information on actions taken to reflect the findings of ADB is provided below:

A. Findings: Findings were as follows:

Construction Camp:

- Requested documents and management plans: All requested documents (IEE, EMP, SSEMP, monitoring checklists, licenses, permits, complaints log book, as well as records of trainings) were kept on camp site. The draft version of SSEMP was prepared by the Contractor and sent to Supervision Consultant (SC) for endorsement on 10.04.2017. SSEMP has been further reviewed and commented for improvement by the MDF's Local Environmental Consultant and ADB/RETA International-Regional Environmental Consultant. It was approved by PIU/MDF in June 2017. All requested management plans have been prepared except Traffic Management Plan and Inventory of Hazardous Waste. Company Waste Management Plan was prepared and submitted to MoENRP in February 2017 for approval.
- Waste Management: Camp territory is graveled, fenced and kept clean. Household waste as well as plastic and paper is collected in special waste bins and periodically disposed by Ltd. "Tbilservis Group" on a contractual base. Hazardous waste area is well established with concrete ground, roofing, fencing, with special signs, drainage system and with secondary container/drip tray. Hazardous waste such as contaminated soil, solvents, materials used in oil spill cleanups and etc. is collected in closed drums and passed to a licensed operator company "Sanitari" Ltd. Contract with Sanitari Ltd signed on 21 June 2017. Asbestos containing waste collected throughout the site was transported on a special garbage dump by Ltd. "Datuni". All works were completed successfully according to GEO requirements. Acceptance delivery act with photos is exist at camp site.
- Oil Spill: Two small oil spills from oil filters were observed at camp site. The ADB Mission advised SC to issue NCR to CC to immediately correct the non-compliance. Results to be reflected in September's monthly report of SC and accordingly to be submitted to ADB.
- Biodiversity: Cut Red Book trees were disposed at camp site, CC is waiting for the response from the Ministry of Economy and Sustainable Development of Georgia for further instructions.
- GRM: Grievance Redress Mechanism is well established and operational. CC assigned designated CLO/Focal Person for the site to interface with local

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communities and be accessible to respond to people's queries and concerns. Name and contact details of CLO were announced to local stakeholders through various outreach activities, including printed announcements, information meetings, etc. Grievance Log Book as well as grievance box exist at the camp site. It was agreed that a copy of logbook, together with status update on pending grievances, should be submitted, through SC, to PIU/MDF and ADB on a bi-monthly basis. A summary report on grievances reported and closed by CC should be submitted to MDF and ADB as part of semi-annual EMR.

Corrective actions

- Inventory of waste materials has been prepared and submitted to the MoE. Traffic management plan has been submitted to the Engineer, but was rejected. Improved document will be submitted before 20.01.2018;
- Polluted soil has been removed and disposed with hazardous waste. Additional pollution prevention and waste management training has been conducted for vehicles operators;
- Ministry of economy still has not sent to the Contractor instructions regarding disposal of red data list trees;
- A summary report on grievances reported and closed by CC will be submitted to MDF and ADB as part of semi-annual EMR.
- **Construction Site:**
 - Tunnel excavation section: It was observed that municipal waste thrown directly on the ground along the fencing as well as used tires.
 - KP. 4. 400 – Retaining wall construction section: a) Construction vehicles produced dust in dry weather. Spraying of water during the dry weather is necessary; b) Concrete has washed off the section near the retaining wall construction area, request made for installation of concrete washout pit; c) small oil spill was also observed at the construction area.

Corrective actions

- Municipal waste has been collected and disposed on municipal landfill;



- The Contractor is spraying water on site during dry weather;
- Washout pit was excavated on PK4.800

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- Polluted soil has been removed and disposed with hazardous waste.
- **Topsoil:** Topsoil stockpiled according to the GEO regulations on special designated area with signs.
- **Monitoring (noise, air, groundwater, dust):** Based on the contract between Contractor and National Environmental Agency, contractor performs monthly measurements of air, water, vibration and noise in different points. Monitoring results will be reflected in quarterly reports of SC as well as in next Jul-Dec 2017 BAEMR.

PART IV - Action plan for the next period

144. Next EMR for **Tbilisi-Rustavi Urban Link -section II** project for the period January-June, 2018 will be submitted in July, 2018 (at the same time as EMRs for SUTIP 1 and 2).
145. SSEMP for section two (middle section) will be prepared in Q1;

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1 Annexes

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Annex 1: Monitoring Data

Object of monitoring	Control/Sampling Point	Technique	Frequency/Time	Target	Entity responsible for Monitoring
Possession of official approval or valid operating license and permits	Supplier of materials (asphalt, cement and gravel)	Inspection	Before an agreement for the supply of materials is formalized	Assure compliance with HSE requirements	Constructing Contractor, MDF, Supervising Agency
Truck loads covered/ wetted Air pollution due to the dust and fumes related to the Material Transport	Construction site and access road	Supervision	Unannounced inspections during work hours	Assure compliance with HSE requirements. Ensure safety, and minimize traffic disruption	Constructing Contractor, MDF, Supervising Agency
Top-soil storage reinstatement, Erosion control Landscape destruction Visual impacts	Construction site	Supervision	Periodic (Unannounced inspections during work hours); From top-soil stripping – to completion of the works	Assure compliance with construction standards, environmental norms and EMP provisions	Constructing Contractor, MDF, Supervising Agency
Noise and vibration levels Compliance with the noise and vibration standards Compliance with the recommendations adopted by the additional studies on assessment and prevention of vibration impacts on the structural integrity of buildings. Admissible thresholds: Noise – 55dBA (Daytime) – 45 dBA (Night time)	Construction Site Near the residential buildings	Inspection, compliance monitoring (engine maintenance, usage of mufflers, night time work limitations and other provisions of EMP), monitoring of noise continuously at a representative residence near construction activities, noise and vibration measurement by special device	Periodic (average once per month); Only in case of complaints	Assure compliance with HSE requirements, good condition of standard construction machinery and limiting the works near settlements	Constructing Contractor, MDF, Supervising Agency, MoENRP

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Vibration 74 dBV (Daytime)					
Vibration Admissible thresholds: Vibration 74 dBV (Daytime)	Construction site Near the residential buildings	Supervision	Unannounced inspections; following complaints	Assure compliance with HSE requirements.	Constructing Contractor, Supervising Agency,
Dust and Air pollution (solid particles, suspended solids, flying heavy metal particles) (dust, CO) Criteria: MAC for dust 0.15mg/m ³ For cement dust – 0.5mg/m ³ And MAC for CO 0.5 mg/m ³	Near residential buildings Along the whole alignment of the road	Visually and instrumentally (dust, CO ₂)	Daily During material delivery and periodically (weekly) in dry periods during construction	Assure compliance with HSE requirements, assure compliance with environmental norms and EMP provisions	Constructing Contractor, MDF, Supervising Agency
Traffic safety/ Vehicle/ pedestrian access Visibility/ appropriate signs	Construction site	Observation	Once per week in the evening	Assure compliance	Constructing Contractor, MDF, Supervising Agency
Material and waste storage, handling, use Water and soil quality (suspended solids, oils, etc)	Material and waste storage sites; Run off from site; material storage areas; wash down areas	Observation Instrumental measurement of water turbidity upstream and downstream	During material delivery and periodically during construction (average 1/week), especially during precipitation (rain/ snow/ etc).	Assure pollution abatement; Assure compliance with construction standards, environmental norms and EMP provisions	Constructing Contractor, MDF, Supervising Agency – instrumental
Waste Management	All construction sites, Camps	Observation	Once per week	Assure pollution Abatement, Assure compliance with, construction standards, environmental norms and EMP provisions	Constructing Contractor, MDF, Supervising Agency

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Equipment maintenance and Fueling Water and soil quality (suspended solids, oils, fuel, etc)	Refueling and equipment maintenance Facilities, Run off from site, material storage areas	Observation	During material delivery and periodically during construction (average 1/week), especially during precipitation (rain/ snow/ etc).	Assure pollution abatement	Constructing Contractor, MDF, Supervising Agency,
Impacts on archaeological sites and remnants	All earthwork sites	Observation	Permanent/daily	Assure cultural heritage protection	Archaeologist from MoCMP Constructing Contractor, Supervising Agency,
biological recontamination during earthworks near pestholes of soil infections (e.g. anthrax);	All earthwork sites	Observation	Permanent/daily	Assure health protection	Constructing Contractor, MDF, Supervising Agency, Veterinary Department of the MoA
Protection of infrastructure elements	Crossings of power lines, pipelines;	Observation	During construction activities at the sites of concern	Assure infrastructure protection	Constructing Contractor, MDF, Supervising Agency,
Offset tree planting Program	TBD	Observation	During Construction period	Assure offset of damage to flora and landscape	Constructing Contractor, MDF, Supervising Agency, MoENRP
Reinstatement of work sites	work sites, road alignment, used quarries, camp sites	Observation	During Construction period, after completion of works at concrete site	Reinstatement of work sites not taken by RoW	Constructing Contractor, MDF, Supervising Agency,
Disposal of construction wastes	work sites, road alignment, used quarries, camp sites	Observation	During Construction period, after completion of works at concrete site	Ensure pollution prevention and landscape protection;	Constructing Contractor, MDF, Supervising Agency,
Personal Protective equipment. HSE issues Organization of traffic by-pass	Construction site	Inspection	Unannounced inspections during works	Assure compliance with HSE requirements	Constructing Contractor, MDF, Supervising Agency,

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Annex 2: Implementation report on the environmental impact assessment (EIA)/initial environmental examination (IEE)/Site Specific Environmental Management Plan (SEMP) mitigation requirements

Reference	Requirement	Action to date	Action required/comment
Air pollution (dust, emission)	<ul style="list-style-type: none"> ➤ Water spraying inside and around the construction sites; ➤ Using of only such vehicles and equipment that are registered, have necessary permits and maintained with relevant standards; ➤ Storages of construction materials are located far from residential areas; ➤ During the transportation of construction material the trucks are covered with special tarpaulins or other cover means to avoid spreading of fine aggregated material in the air; ➤ The transportation of materials are carried out by initially selected and determined routs and the speed of the trucks are limited; ➤ Wheels and undercarriage of haul trucks cleaned and washed prior to leaving construction site. 	<p>Water spraying is conducted several times a day during dry days.</p> <p>All vehicles are maintained in good working conditions and have necessary permits.</p> <p>Construction materials are stored outside of residential areas.</p> <p>During the material transportation cars are covered and follow initially determined routes</p> <p>Wheels on machines used in construction activities are washed prior to leaving construction site</p>	<p>SEZA OHS specialist and HS&E manager are presented on construction site during all construction activities and monitor air pollution.</p> <p>DOHVA and Gamma Consulting are caring everyday monitoring of construction activities and pay special attention to air pollution (dust, emissions).</p>
Noise and Vibration	<ul style="list-style-type: none"> ➤ Using of only such vehicles and equipment that are registered, have necessary permits and maintained with relevant standards; ➤ No noisy construction activities during the nights ➤ Usage of silencers, mufflers and acoustic shields on equipment ➤ Limitation of the number of machines used one and the same time ➤ Using vibration absorbing handles or rubber-type vibration insulating devices between the tool 	<p>All vehicles are maintained in good working conditions and have necessary permits.</p> <p>No construction activities are carried our during the night hours in adjacent to residential areas.</p> <p>Machine use is regulated to control noise and vibration.</p> <p>Workers safety measures are in place to prevent incidents</p> <p>Construction Company is regularly monitoring noise and vibration in construction corridor</p>	<p>SEZA HS&E Manager is on site and monitors noise and vibration due to construction activities.</p> <p>Gamma Consulting provides technical assistance to SEZA HS&E Manager.</p> <p>Supervision Company environmental manager is everyday monitoring construction process and</p>

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	<p>and the hands implemented by the contractor</p> <ul style="list-style-type: none"> ➤ Using hearing protection for workers ➤ Fixing 'out-of-balance' items will reduce noise levels to a moderate magnitude ➤ Contractor should carry out noise and vibration monitoring on site. 		<p>provides detailed recommendations to maintain noise and vibration standards in line with Georgian regulations.</p>
Topsoil and subsoil	<ul style="list-style-type: none"> ➤ Top soil removal should be conducted in accordance with the top soil management plan, which was developed by Construction Company (June 10, 2017) and agreed with the Ministry of Environment and Natural Resources Protection ➤ Contractor should minimize usage of productive agricultural land and after completion of civil works should convert them to their original state. ➤ Embankments should be monitored during construction for signs of erosion; ➤ Long-term material stockpiles should be covered to prevent wind erosion. ➤ The storage of topsoil in stockpiles should be conducted with relevant procedures and standards ➤ Topsoil stockpiles should be monitored and in case of any adverse conditions be identified corrective actions should be taken. ➤ The storage and monitoring of subsoil in stockpiles should be conducted also with relevant procedures and standards 	<p>Construction Company is managing removed topsoil based on topsoil management plan agreed with the Ministry of Environment and Natural Resources Protection</p> <p>Topsoil protection monitoring activities are in place and monitored by Construction and Supervision companies</p>	<p>Gamma Consulting has developed topsoil management plan which was agreed with the Ministry of Environment and Natural Resources Management</p> <p>Construction Company SEZA is implementing soil removal and allocation activities based on topsoil management plan</p> <p>SEZA HS&E manager and experts of Gamma consulting are monitoring soil removal and allocation activities and ensuring topsoil protection activities</p> <p>DOHWA environmental manager supervises all topsoil management activities and ensures compliance with topsoil management plan</p>
Soil Contamination	<ul style="list-style-type: none"> ➤ Inspection of vehicles should be carried out to ensure that there is no 	<p>All vehicles are maintained in good working conditions and have necessary permits.</p>	<p>SEZA HS&E manager and experts of Gamma</p>

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	<p>leakage of fuel and lubricating materials into the soil.</p> <ul style="list-style-type: none"> ➤ Contractors should ensure the proper handling and storage of lubricants, fuel and solvents to prevent any leakage of these materials into the soil. ➤ All tanks should be placed in a bund according with relevant procedures and standards. ➤ Refueling process should be made according to established standards and procedures. ➤ Equipment and storages should be isolated and guarded. 	<p>All lubricants, fuel and solvents are managed properly to prevent any leakage of these materials into the soil.</p> <p>All tanks and refueling activities are managed based on safety and environmental protection procedures.</p>	<p>consulting are monitoring pollution and guide technical engineers of construction company in implementation of soil contamination prevention activities.</p> <p>DOHWA environmental manager supervises soil-monitoring activities and ensures compliance with Georgian legislation.</p>
<p>Flora and Fauna</p>	<ul style="list-style-type: none"> ➤ Pre-entry survey should be conducted ➤ Exact demarcation of felling trees (to exclude cutting of other trees) should be made ➤ Each tree subject for felling should be marked, measured and described and the tree felling program should be agreed with the Tbilisi City Hall (Environmental Services), as well as Gardabani municipality ➤ The red data species extraction within the municipal land plots should be agreed with the Tbilisi City Hall, Gardabani municipality and Ministry of Environment and Natural Resources Protection. ➤ Felling of the common species of trees not included in the red data list should be conducted in accordance with the Law of Georgia "On special protection of green plantations and state forest fund within the boundaries of Tbilisi 	<p>Gamma Consulting held pre-entry survey and tree demarcation activities.</p> <p>Tree cutting permits were obtained from the Ministry of Environment and Natural Resources Protection of Georgia, Tbilisi city hall and Gardabani municipality.</p> <p>Field survey has been conducted to confirm absence of bat colonies.</p> <p>Work of heavy machinery is monitored to prevent disturbance of local Fauna in Krtsanisi Forest Park</p>	<p>SEZA HS&E manager and experts of Gamma consulting are monitoring tree-cutting and construction activities to minimize impact on local flora and fauna.</p> <p>DOHWA environmental manager supervises tree-cutting activities and ensures compliance with environmental permits obtained from the Ministry of Environment and Natural Resources Protection of Georgia, Tbilisi city hall and Gardabani municipality.</p>

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	<p>and its environs” (2000, as amended in 2015).</p> <ul style="list-style-type: none"> ➤ The process of extraction of the red list trees should be proceeding according to special procedures and agreement with the MoENRP, determined by the law of Georgia on “the Structure, Incumbency and Rule of Conduct of the Government of Georgia”. ➤ Survey should be conducted to confirm the absence of nests of protected bird species within the limits of the construction corridor ➤ Survey should be conducted to confirm the absence of the bat colonies in the tree hollows to be cut down ➤ Limitation of the dust and emissions from construction machinery/vehicles especially near street trees and the parkland/green recreation area in the Krtsanisi Forest Park should be used to control and reduce risks and hazards 		
<p>Water resource and r. Mtkvari</p>	<ul style="list-style-type: none"> ➤ All operation of vehicles in the river should be prevented and if there is no alternative, inspection of vehicles should be required to ensure that there is no leakage of fuel and lubricating materials. ➤ The Construction Company should ensure the proper handling of lubricants, fuel and solvents. Fuel and lubricant storage tanks should not be located within 50m of any watercourse, well or dry gorges. All tanks should be placed in a bund of at least 110% of the tank’s 	<p>All construction activities are precisely monitored in vicinity of River Mtkvari. Operation of vehicles in the river is restricted and special inspection is in place to prevent leakage of fuel and lubricants.</p> <p>All construction materials and machinery has been located 50 M away from surface of the water. All equipment and machinery has been maintained in good working conditions. The construction waste has been accumulated in special areas away from the water bodies and removed buy authorized</p>	<p>Monitoring of the Surface water mitigation level is been carried out by contractor environmental specialist on every day basis and by supervising environmental specialist</p> <p>Regular check-up and inspection; Laboratory control – as necessary (in case of oil spills). During this period no problems has been</p>

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	<p>maximum capacity. If more than one tank is stored within the bund, the system must be capable of storing 110% of the biggest container's capacity or 25% of their total capacity, whichever is greater. The bund should be impermeable (e.g. concrete-lined), without drainage points or other breaches. Accumulated rainwater in bunds should be pumped out of the bund to either drains or the ground if uncontaminated. In case of fuel spillage the spilled fuel should be recollected and contaminated bund treated by the absorbents: sawdust, sand or straw.</p> <ul style="list-style-type: none"> ➤ All fuel / hydrocarbon dispensing nozzles should be of a drip control design and securely locked when not in use. ➤ No fuel storage or refueling of vehicles or equipment should be allowed within 100 m of any watercourse, water body, well, dry gorge or within any designated wetland area or aquifer. ➤ Vehicles should not be left without supervision during refueling process. All refueling operations on the working sites should use absorbent pads and/or straw to minimize spills, which should be put in place prior to the commencement of refueling operations. ➤ Ground water and surface water pollution risk should be reduced or eliminated in case of immediate removal of polluted ground. Soiled ground and absorbents should be removed, stored and 	<p>personal only. On site environment specialists are maintaining visual monitoring for oils spills and equipment conditions, no accidents has been detected. Personal is being instructed on environment and safety issues rules and regulations.</p> <p>Emergency management plan is developed by Gamma Consulting and agreed with the Ministry of Environment and Natural Resources management where special attention is paid to River Mtkvari prevention from the pollution. EMP provides special procedures to be used during the emergency situations.</p>	<p>detected</p>
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	<p>treated as hazardous waste.</p> <ul style="list-style-type: none"> ➤ In case of significant spill authorized and responsible person should be informed, works should be stopped till the elimination of pollution. ➤ Refueling process should always be carried out with the correct equipment (i.e. nozzles of the appropriate size), and only by suitably trained and experienced refueling operators. Fuel supply equipment should be regularly revised to prevent leakage due to inappropriate condition of refueling equipment. ➤ Equipment and storages should be isolated and guarded to prevent pollution due to cases of stealing or vandalism. ➤ All mobile plant, including but not limited to cranes, compressors, generators, bulldozers, excavators etc. and storage tanks should be maintained and operated such that all leaks and spills of materials should be minimized. ➤ Daily plant checks (Vehicle Maintenance Procedure) should be undertaken to ensure no leaks or other problems are apparent. Vehicle maintenance, cleaning, degreasing etc. should be undertaken in designated areas of hard-standing, not over made unstable ground (embankments etc.). ➤ Water Tanks with sprinklers should envisage for watering roads and machinery maintenance. ➤ Maintenance points should not be located within 50m of any 		
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	<p>watercourse, well or dry gorge. The storage of potentially polluting materials, refueling and maintenance of mobile plant within 50m of all watercourses/water bodies, dry riverbeds and within designated wetlands and aquifers should be prohibited.</p> <ul style="list-style-type: none"> ➤ Erosion control measures should be applied during construction activities to prevent increased runoff into the watercourses. ➤ Contractor should plan all excavations, topsoil and subsoil storage so as to reduce to a minimum any runoff. Contractors should be required to organize and cover material storage areas and to isolate wash down. Where any area of the spread is at risk from silt pollution washing off into a watercourse of water body, effective measures should be put in place to ensure that such pollution does not occur. Wet cement and/or concrete should not be allowed to enter any watercourse, pond or ditch. ➤ Near the river bed Mtkvari in the vicinity of no more than 100 m. radius should be installed temporary fuel tank. The tank should be placed in a covered area, and located and designed in way to allow collection of accidental spilled liquid contaminants. ➤ Asphalt pavement activities should be conducted in dry days to avoid run off in the river ➤ Erosion control and pollution prevention measures should be planned for the site of 		
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	<p>crossing the dry gorge with seasonal stream, in the area of planned bridge. Slope landscaping and vegetation should be envisaged and in addition installation of temporary berms and sediment traps should be required, in case if during construction erosion will be stimulated.</p> <ul style="list-style-type: none"> ➤ No fueling operations should be allowed near the dry gorge. ➤ Proper organization and design of the drainage channels and oil/grease separating simple water-treatment installations should be installed. ➤ Natural oil separator drainage system should be installed where it is considered appropriate and the contractor should elaborate this system. ➤ The Construction Contractor should take all measures to protect vegetation cover located on slopes near the riverbeds. This approach will contribute to minimization of river bank erosion risk. ➤ All construction activities near the riverbed should be planned during the low water season period in the river Mtkvari ➤ All the activities which require technical intervention in the riverbed should be planned out of spawning period. 		
<p>Hazardous and Non-hazardous Waste</p>	<ul style="list-style-type: none"> ➤ All wastes generated during project implementation phases should be manage in accordance with waste management plan that Construction Company has elaborated In May, 2017 and needs to be agreed with the Ministry of 	<p>Gamma Consulting has developed waste management plan in accordance to state regulations.</p> <p>Regular check-up and inspection is implemented by Construction Company for proper waste management.</p> <p>Construction waste is accumulated on construction site</p>	<p>SEZA HS&E Manager on every day basis is caring out inspection of waste management activities with special attention to hazardous waste.</p> <p>DOHWA environmental</p>

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	<p>Environment and Natural Resources Protection</p> <ul style="list-style-type: none"> ➤ Disposal of the hazardous wastes also needs to be agreed with the MoENRP and local authorities and managed according to adopted waste management plan. ➤ The Construction Company should collect hydrocarbon wastes, including lube oils, for safe transport off-site for reuse, recycling, treatment or disposal at the temporary storage sites and further at the locations approved by MoENRP or pass it to the licensed operator, having environmental permit on operation of the hazardous wastes. ➤ The Construction Company should take responsibility for the asbestos waste management. The certified company should be hired by Construction Company for proper management and safe disposal of asbestos waste according to existing acting legislation and good international practices. 	<p>in special isolated areas divided by hazardous, domestic and construction waste. Construction company has signed contract with the companies for waste removal. The waste is being removed from construction site by authorized personal only in accordance of safety regulations.</p>	<p>manager supervises waste management in accordance to best international practices and Georgian legislation.</p>
<p>Cultural heritage</p>	<ul style="list-style-type: none"> ➤ In case of discovering any archeological sites or artefacts Construction Company should act according to elaborated cultural heritage management plan. 	<p>Cultural heritage management plan is developed by Gamma Consulting.</p> <p>Construction Company is implementing all activities in compliance with cultural heritage management plan.</p> <p>No archeological sites or artifacts were found during the construction works</p>	<p>SEZA HS&E Manager on every day basis is caring out inspection construction activities to monitor cultural heritage discovery on construction site.</p>
<p>Damage to existing infrastructure</p>	<ul style="list-style-type: none"> ➤ The complete list of the utilities and infrastructure to be relocated or affected should be developed 	<p>Construction Company has developed list of utilities and infrastructure to be relocated</p> <p>Before construction is started the Construction Company is</p>	<p>Construction company engineers are in active cooperation with utility companies</p>

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	<ul style="list-style-type: none"> ➤ The Construction Company should be working closely with any utility company having their infrastructure located within the public right-of-way. ➤ Before construction is started the Construction Company should notify the utility companies of the proposed work area and should request that they mark the location of any types of equipment in the area. ➤ The Construction Company should establish the position of existing services such as pipelines, sewers, surface water drains, cables for electricity and telephones, overhead lines and water mains, before starting any excavation or other work likely to damage them. ➤ The Construction Company should arrange liaison with the appropriate authorities, the moving of or alterations to services such as pipelines, power and telephone lines, water mains, sewers and surface water drains which are affected by the works. 	<p>notifying the utility companies about planned construction activities.</p> <p>All infrastructure in the construction corridor is reallocated or in the process of relocation.</p> <p>Construction Company has establish and keeps active working cooperation with utility companies.</p>	<p>owning infrastructure in vicinity of construction corridor.</p>
<p>Community safety and traffic disruption</p>	<ul style="list-style-type: none"> ➤ Design and construction works should be in compliance with the technical standards ➤ Emergency Response plan should be developed and agreed with the Ministry of Environment and Natural Resources Protection ➤ Traffic Management Plan should be developed by Construction Contractor and agreed with the Road Department of Georgia and Patrol Police Department 	<p>Construction activities are carried out in line with safety technical standards.</p> <p>Emergency response plan is in place and followed by construction company workers.</p> <p>Traffic management plan is in elaboration process.</p> <p>Before initiation of construction activities Road and Patrol Police departments are notified to ensure safety procedures</p>	<p>SEZA HS&E Manager on every day basis is caring out inspection of construction activities and informs Road and Police departments of Georgia about construction activities.</p>

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	<ul style="list-style-type: none"> ➤ To avoid/minimize traffic disruption traffic management schemes should be applied ➤ The Construction Company should work in close cooperation with Road Department and Patrol Police Department to regulate traffic on the project site. ➤ Road vehicles should be equipped with sound signals and light signals ➤ Parking place should be arranged with relevant standards ➤ Road men should be provided with special uniforms and special footwear. 		
Occupational health and safety	<ul style="list-style-type: none"> ➤ The Construction Company should perform works in accordance with labor protection and safety requirements as well as industrial sanitation requirements. ➤ The Construction Company should instruct the staff on safety measures prior to the commencement of works ➤ Workers should be using personal protection equipment during working period. Warning signs should be placed at the project area. 	<p>Health and Safety management plan is in elaboration process and will be in place from July 2017</p> <p>Monitoring of the labor safety issues are carried out by Construction Company HS&E Manager on every day basis;</p> <p>Workers are equipped with PPE equipment.</p>	<p>SEZA HS&E Manager on every day basis is caring out inspection of health and safety issues assisted by OHS specialist of SEZA</p>
Workers Camps	<ul style="list-style-type: none"> ➤ The construction camp should be equipped with necessary infrastructure. ➤ Monitoring activities should be implemented by Environmental Specialists on the daily basis. 		

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Annex 3: Photos

<p>Photograph No. 1 Traffic signs are installed along RoW</p>	<p>Photograph No. 2 Hazardous materials are disposed in drip trays</p>
	
<p>Photograph No. 3 – Dangerous areas are fenced</p>	<p>Photograph No. 4 – Refueling area</p>
	
<p>Photograph No. 5 – Construction sites are fenced</p>	<p>Photograph No. 6 – Installation of safety barriers along RoW</p>

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Photograph No. 7 –Daily safety Induction



Photograph No. 8 – During working on height workers use falling protective PPE



Photograph No. 9 Concrete washing pit



Photograph No.10 Diversion of main road



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Annex 4: Example of Environmental Checklist

HS Check-list

Kontrol Listesi Numarası: Təhlükəsizlik və mühafizə		PANOS NO-1 qutu	PANOS NO-2 qutu	PANOS NO-3 qutu	PANOS NO-4 qutu	PANOS NO-5 qutu	PANOS NO-6 qutu	PANOS NO-7 qutu	PANOS NO-8 qutu	PANOS NO-9 qutu	PANOS NO-10 qutu	PANOS NO-11 qutu	PANOS NO-12 qutu	PANOS NO-13 qutu
11	Panodan bəzəli uyğun müddət? qutunun bəzəli uyğun müddət?	✓	✓	✓	✓	✓	✓							
12	Topraklama bəzi məlumat? qutunun bəzi məlumat?	✓	X	X	X	X	✓							
13	Prişlər sağlamlıq və istifadə edilə bilər? Prişlərin sağlamlıq və istifadə edilə bilər?	✓	N/A	N/A	N/A	✓	N/A							
14	Pano yuxarıda uyğun yəqin ələməyə ehtiva məlumat? qutunun yuxarıda uyğun yəqin ələməyə ehtiva məlumat?	✓	✓	✓	✓	✓	✓							
15	Pano sənədi (kəmərlər və ya kəmərlər) məlumat? qutunun sənədi (kəmərlər və ya kəmərlər) məlumat?	✓	✓	✓	✓	✓	✓							
16	Pano diqqət məlumat (ya və ya) məlumat? qutunun diqqət məlumat (ya və ya) məlumat?	✓	✓	✓	✓	✓	✓							
17	Pano bəzəli məlumat və məlumat? qutunun bəzəli məlumat və məlumat?	✓	✓	✓	✓	✓	✓							
18	Uyğun məlumat məlumat? qutunun uyğun məlumat məlumat?	✓	X	✓	✓	✓	✓							
19	Kəmərlər məlumat məlumat? qutunun kəmərlər məlumat məlumat?	✓	N/A	✓	✓	✓	✓							
20	Pano məlumat (ya və ya) məlumat? qutunun məlumat (ya və ya) məlumat?	✓	✓	✓	✓	✓	✓							
Kullanma Uygun / Uygun değil qutunun kullanma Uygun / Uygun değil		✓	✓	✓	✓	✓	✓							
Kontrol Tarixi (Control Date):		26.08.2017												
Kontrol Eden (Controlled By):		G. Sumbadze												
Not Note: Hayır No (-) Evet Yes (✓)														

Kontrol Listesi Numarası: Təhlükəsizlik və mühafizə		ELEKTRİKLI EL ALETLERI KONTROL LİSTESI POWER TOOLS CONTROL CHECKLIST					
No	Ekipman Cinsi: Equipment Type	Serial Number	Topraklama / Çift izolasyon mevcut mu? Earthing or double insulation available?	Kablolarda herhangi bir hasar anza var mı? Cable, cord is in good condition?	Ekipmanın dışında herhangi bir hasar mevcut mu? Device body is in good condition?	Dönen parçalar için koruyucu mevcut mu? Guard available for moving parts	Kullanma Uygun / Uygun değil Acceptable / Unacceptable
1	Şarj edilə bilər	X	✓	✓	✓	X	✓
2	Şarj edilə bilər	157602R	✓	✓	✓	✓	✓
3	Şarj edilə bilər	038618X	✓	✓	✓	X	✓
4	Şarj edilə bilər	X	✓	✓	✓	X	✓
5	Şarj edilə bilər	X	✓	✓	✓	X	✓
6	Şarj edilə bilər	X	✓	✓	✓	X	✓
7	Şarj edilə bilər	X	✓	✓	✓	X	✓
8	Şarj edilə bilər	X	✓	✓	✓	X	✓
9	Şarj edilə bilər		✓	✓	✓	X	✓
Kontrol Tarixi (Control Date):			26.08.2017				
Kontrol Eden (Controlled By):			G. Sumbadze				
Not Note: Hayır No (-) Evet Yes (✓)							

Construction of The Modernization of Tbilisi-Rustavi section of the
Tbilisi-Red Bridge (Azerbaijani Border) Road

G. Sumbadze

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YANGIN TÜPÜ KONTROL LİSTESİ / ԳՅՆՆԵՆԻՆԻ ՌԵՄՈՆՏԻՆԻՆ ԱՍ
Construction of The Modernization of Tbilisi-Rustavi section of the
Tbilisi-Red Bridge(Azerbaijan Border) Road

Kontrol Listesi Numarası: ԳՅՆՆԵՆԻՆԻ ԿՆՆՆԵՆԻՆԻ	TÜP №1	TÜP №2	TÜP №3	TÜP №4	TÜP №5	TÜP №6	TÜP №7	TÜP №8	TÜP №9	TÜP №10	TÜP №11	TÜP №12	TÜP №13	TÜP №14	TÜP №15	TÜP №16	TÜP №17	TÜP №18	TÜP №19	TÜP №20	TÜP №21	
KONTROL BÖLÜMLERİ	SEZA OFFICE	SEZA OFFICE	DOHWA OFFICE	DOHWA OFFICE	CAMP 3	CAMP 3	LABORATORY	YEMEKHANE	YEMEKHANE	CAMP 7	CAMP 7	CAMP 8	CAMP 8	CAMP 9	CAMP 9	REFUELING AREA	WASTE AREA	CAMP 10	CAMP 10	CAMP 10	WORKSHOP	
Yanğınlıq qorunma və uyarıcılar yerdə mi? (Yanğınlıq qorunma, uyarıcılar, qoruyucu qurğular varmı?)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Yanğınlıq təhlükəsi və pənlə əylənməyə və sağlamlıq (Yanğınlıq təhlükəsi, pənlə əylənməyə və sağlamlıq)	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Yanğınlıq bəzəmələri qətiyyətli şəkildə saxlanılır mı? (Yanğınlıq bəzəmələri qətiyyətli şəkildə saxlanılır mı?)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Yanğınlıq təhlükəsi təhlükəli və zərərli mi? (Yanğınlıq təhlükəsi təhlükəli və zərərli mi?)	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Yanğınlıq təhlükəsi pənlə əylənməyə və sağlamlıq (Yanğınlıq təhlükəsi pənlə əylənməyə və sağlamlıq)	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Yanğınlıq təhlükəsi hər hansı bir pənlə əylənməyə zərərli mi? (Yanğınlıq təhlükəsi hər hansı bir pənlə əylənməyə zərərli mi?)	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Yanğınlıq təhlükəsi kontrol edilən və ya yoxdur? (Yanğınlıq təhlükəsi kontrol edilən və ya yoxdur?)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Yanğınlıq təhlükəsi / Yanğınlıq təhlükəsi qorunma tədbirləri varmı? (Yanğınlıq təhlükəsi / Yanğınlıq təhlükəsi qorunma tədbirləri varmı?)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kontrol tarixi (Control Date)	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017	25.08.2017
Kontrol Eden (Control Person)																						
Not: (Note)																						

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Environmental Checklists

Documents and Facts to be Examined		Status				Comment
		Yes	Partially	No	N/A	
Permits, Contracts	The Contractor has a License for extraction of natural resources (including method statement)				✓	
	The Contractor has an environmental permit for production of construction materials (cement, asphalt, brick, etc.)				✓	
	The contractor has a license for tree felling (including red data trees)	✓				

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	The Contractor has a permit for final disposal of garbage	✓				
	The Contractor has a permit for final disposal of construction waste	✓				
	The Contractor has a permit for disposal top soil and subsoil	✓				
	Conduction of HSE training for personnel	✓				
	The Contractor has executed the contract on the hand-over and disposal of hazardous waste (with the licensed organization)	✓				
	Performance of Civil Works	The site is fenced and warning signs are arranged	✓			
The construction works do not impede pedestrian and motor traffic, or the temporary detour routs are organized.		✓				
The working hours are observed in the human settlements and their vicinity		✓				
During the required temporary disruptions of water, power or gas supply, the customers are notified in advance		✓				

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	suspended and the employer is notified in written form.	✓				
	Top soil protection	✓				
	Protection of trees	✓				
	Pollution prevention	✓				
Safety Measures	The workers use all personal safety equipments required for individual technological processes (hard hats, gloves, respirators, glasses, etc.)	✓				
	The sites are provided with the fire fighting and emergency medical aid kits	✓				
Works' Completion	After completion of main works, the site undergoes final cleanup, harmonization with outward landscape and landscaping				✓	
	After completion of the operations in the quarry or its certain section, the idle material is backfilled, compacted, terraced and harmonized with the landscape.				✓	