SEMI-ANNUAL ENVIRONMENTAL MONITORING REPORT

Project Number: 43405-028

Reporting Period: July-December 2019

GEORGIA: URBAN SERVICES IMPROVEMENT INVESTMENT PROGRAM (TRANCHE 6)

(FINANCED BY THE ASIAN DEVELOPMENT BANK)

Prepared by: Ketevan Chomakhidze, Environmental Consultant, "United Water Supply Company of Georgia", Tbilisi, Georgia

For: The Ministry of Regional Development and Infrastructure of Georgia and the Asian Development Bank

Endorsed by: Maka Goderdzishvili, Head, Department Environmental Protection and Permits

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ABBREVIATIONS

ADB	Asian Development Bank
DC	Design Consultant
DEPRP	Department of Environmental protection, Resettlement and Construction Permit
DIPDR	Department of International Procurement and Donors Relations
EA	Executing Agency
EARF	Environmental Assessment and Review Framework
EHS	Environmental Health & Safety
EIA	Environmental Impact Assessment
EIP	Environmental Impact Permit
EMP/ SSEMP	Environmental Management Plan/ Site-Specific Environmental Management Plan
ES/ SES	Environmental Specialist/ Senior Environmental Specialist
GoG	Government of Georgia
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IA	Implementing Agency
IPMO	Investment Program Management Office
IEE	Initial Environmental Examination
MFF	Multi-tranche Financing Facility
MEPA	Ministry of Environmental Protection and Agriculture
MoRDI	Ministry of Regional Development & Infrastructure
NEA	National Environmental Agency
OJSC	Open Joint Stock Company
SC	Supervision Consultant
USIIP	Urban Sector Improvement Investment Program
UWSCG	United Water Supply Company of Georgia
WSS	Water Supply & Sewerage

1. INTRODUCTION

1.1 Preamble

1. This report represents the Semi - Annual Environmental Monitoring Review (SAEMR) for the Urban Services Improvement Investment Program, Tranche 6.

2. This report is the 5th Environmental Monitoring Review (EMR) of USIIP/Tranche 6.

1.2 Headline Information

3. The IEE for CHI-01 sub-project, which was prepared in August 2016, was updated in September 2019 due to changes in the project design, in particular, due to the construction of a crossing over the Kvirila River with a steel casing.
4. During the reporting period no other changes took place to the project design and accordingly nothing has been updated or prepared.

2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

5. The Urban Services Improvement Investment Program was developed as the Government's response to the lack of adequate and/or safe water supply, sewerage and sanitation in urban areas of Georgia. This is intended to optimize social and economic development in selected urban areas through improved urban water and sanitation services, and is financed by the ADB through its Multi-tranche Financing Facility. The Ministry of Regional Development and Infrastructure is the Executing Agency and the United Water Supply Company of Georgia, LLC is the Implementing Agency of the Investment Program. UWSCG is a 100% state-owned company.

6. The Investment Program will improve infrastructure through the development, design and implementation of a series of subprojects, each providing improvements in a particular sector (water supply and/or sewerage) in one town. Subprojects will rehabilitate existing infrastructure and/or create new and expanded infrastructure to meet the present and future demand. Water supply improvements will include source augmentation and head works, pumping systems, treatment facilities, transmission and distribution network; and, sewerage improvement works will include sewer network, pumping stations, main collectors and waste water treatment plants.

7. Tranche 6 of the Investment Program includes:

- Construction of Water Supply and Waste Water Systems in Marneuli and Construction of Waste Water System and Collector in Bolnisi (MAR-01);
- Construction of Waste Water Treatment Plant in Marneuli (MAR-02);
- Construction of Water Supply System in Chiatura (CHI-01).

The following projects are financed under Tranche 6:

8. **Construction of Water Supply and Waste Water Systems in Marneuli and Construction of Waste Water System and Collector in Bolnisi (MAR-01):** Mar-01 project envisages the rehabilitation and construction of reservoirs with the total capacity of 12,000M^3=(2X3000+3X2000); construction of cast iron transmission pipeline with the diameter of 700 mm - 10 km and 600 mm – 4km; construction of network with Polyethylene pipes of OD 50 to OD 500. The project measures for the sewer network comprise the lying about 150 km new gravity pipes (DN 150 to DN 800) and 2.7 km new pressure pipes (OD 110 and OD 225). There will be 9 new wastewater pumping stations; 600mm to 1000 mm diameter inspection wells (concrete or polyethylene) and 400 mm diameter house connections (polyethylene). Proposed project envisages construction of sewerage system in Bolnisi which will work entirely by gravity (DN 200 and DN 250 HDPE pipes) and will be connected at 3 different points to the future DN 500 HDPE interceptor that will convey the collected sewer from Bolnisi to Marneuli WWTP.

9. Three separate IEEs were prepared for MAR-01 project: Improvement of Marneuli Water Supply System (August 2016); Improvement of Marneuli Wastewater System (August 2016); Improvement of Bolnisi Wastewater System (August 2016) and further updated and approved in January 2019 due to the finalization of the project design (please see para 3 above).

10. The contract No P43405-ICB-MAR-01 was signed on November 20, 2018 with "Akelik Group OJSC" (Azerbaijan). The date of completion of the contract is March 29, 2021.

11. **Construction of Waste Water Treatment Plant in Marneuli (MAR-02).** The project comprises of the construction of new Wastewater Treatment Plant in Marneuli with the capacity of 9,931 m³/day.

12. The contract No UWSCG-ICB-MAR-02-2019 was signed in October 18, 2019 with Joint venture of Toshiba Water Solutions Pvt. Ltd and IN-SI LLC (JV partner) (India/Georgia). The contract completion date is April 2021.

13. **Construction of Water Supply System in Chiatura (CHI-01).** The work under the CHI-01 project comprises the rehabilitation and construction of the water supply network, transmission pipeline and Reservoirs. In particular, Chi-01 project envisages construction of network in Chiatura and Navardzeti, construction of a transmission lines, the rehabilitation of existing reservoirs and construction of 2 new reservoirs one near the intake and one new reservoir in Bisi, construction of pumping stations and replacement of network pipelines, more detailed information is provided in chapter 31 below.

14. The contract No P43405-ICB-CHI-01 was signed on August 21, 2017 with "Akkord Industry Construction Investment Corporation" OJSC" (Azerbaijan), the original completion date 15 April 2019 was extended until the April 2020.

2.2 Project Contracts and Management

15. The following agencies are involved in implementing the Investment program: Ministry of Regional Development and Infrastructure (MoRDI) is the Executing Agency (EA) responsible for management, coordination and execution of all activities funded under the loan. MoRDI has overall responsibility for compliance with loan covenants.

16. Ministry of Environmental Protection and Agriculture of Georgia (MEPA). MEPA has the overall responsibility for protection of environment in Georgia. The Department of Permits of MEPA is responsible for reviewing EIAs and for issuance of the Environmental Permits. MEPA is the main state body pursuing state policy in the sphere of environment. Their functions for regulating economic or development activities with regard to environmental protection include:

- Issuing permits for project development (Environmental Decision)
- Setting emission limits and issuing surface water intake and discharge consents
- Responding to incidents and complaint

17. United Water Supply Company of Georgia (UWSCG) is the implementing agency (IA), which is responsible for administration, implementation (design, construction and operation) and all day-to-day activities under the loan. The Investment Program Management Office (IPMO) under UWSCG is Project Management Department, the Head of Department is Mr. Giorgi Archaia. Environmental issues are followed by the Department of Environmental Protection and Permits of UWSCG. The head of the department is Ms. Maka Goderdzishvili. Ms. Ketevan Chomakhidze is the Environmental Specialist of USIIP/UWSCG.

18. UWSCG as responsible IA for the project recruited a Supervision Consultant (SC) – Hill International N.V. (Netherlands) under T6. The national and international team of consultants assists UWSCG in the supervision of the construction of subprojects under the USIIP. The SC also provides capacity building training to contractor staff in the management and operation and maintenance of the subprojects.

19. The SC assists UWSCG in ensuring that the subprojects are implemented according to the specified standards. SC assignment also includes the supervising of the implementation of the environmental management plans.

20. All mitigation measures during construction are implemented by the contractor: "Akkord Industry Construction Investment Corporation" OJSC, under CHI-01 sub-project. Contractor's EH&S Specialist - Mr. Tamaz Ulumbelashvili, who was dismissed and replaced by Mr. Theodor Kalmakhelidze, is responsible for environmental issues, health and safety during the construction process.. Contractor is monitored by the environmental specialist – Mr. Rezo Enukidze of SCt/Hill and Environmental Specialist of UWSCG/USIIP Ms. Ketevan Chomakhidze. Environmental Specialists of SC and UWSCG/USIIP conducted routine observations and surveys of project sites, issues non-conformance notes. ES of SC prepares quarterly environmental reports and submits to UWSCG.

21. All mitigation measures under MAR-01 sub-project are implemented by the contractor: "Akelik Group OJSC" (Azerbaijan). Contractor's H&S Specialist - Mr. Vakhtang Burchuladze and Environmental Specialist Mr. Paata Chankotadze are responsible for environmental health and safety issues during construction process. Contractor is monitored by the environmental specialist – Mr. Rezo Enukidze of SCt/Hill and Environmental Specialist of UWSCG/USIIP Ms. Ketevan Chomakhidze. Environmental Specialists of SC and UWSCG/USIIP conducted routine observations and surveys of project sites, issues non-conformance notes. ES of SC prepares quarterly environmental reports and submits to UWSCG.

22. The Contractor, prior to the onset of the construction, is obliged to conduct a number of studies and develop environmental plans, including "Site Environment Management Plan" (SEMP). Such plans can be further subdivided into Topic Specific or Site Specific EMP's. The number of such plans will depend upon the type of project, complexity and sensitivity of the receiving environment.

23. Topic Specific EMPs are developed on a topic by topic basis. For example:

- Waste Management Plans;
- Traffic Management Plans;
- Protected Species Management Plans;
- Water Management Plans.

24. These plans are detailed and set out how the project will address potential issues identified in the impact assessment process and ensure that specific mitigation and monitoring measures are fully implemented. A topic specific environmental management plan will cover all of the project.

25. The environmental specialist of UWSCG/USIIP Ms. Ketevan Chomakhidze assists and advise the Department of Environmental Protection and Permits of UWSCG for implementation of USIIP in compliance with the ADB Safeguard Policy Statement 2009 and National Legislation, and oversee the work of CCs and SCs in safeguards compliance. ES supports DEPP in EARF implementation, in particular, reviewing IEE/EIA Reports, overseeing implementation of EMPs, Reviewing and approving SEMPs and carrying out training and capacity-building activities in cooperation with Supervision Company. The ES prepares Semi-annual and annual environmental monitoring reports and submits to ADB.

26. Department of Environmental Protection and Permits of UWSCG is responsible for the implementation of mitigation and monitoring measures during construction and operation of subprojects under USIIP. Currently DEPP is staffed with a Head of Department and 5 specialists, those are responsible for environmental safeguard and construction permission issues.

27. ADB is the donor financing the Investment Program. Environmental management organization is shown in Figure 1 and Figure 2.

Figure 1: Structure Diagram of the Environmental Management Unit of UWSCG

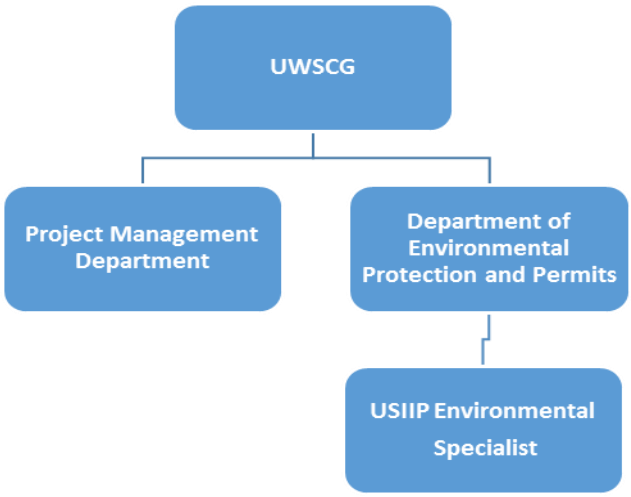
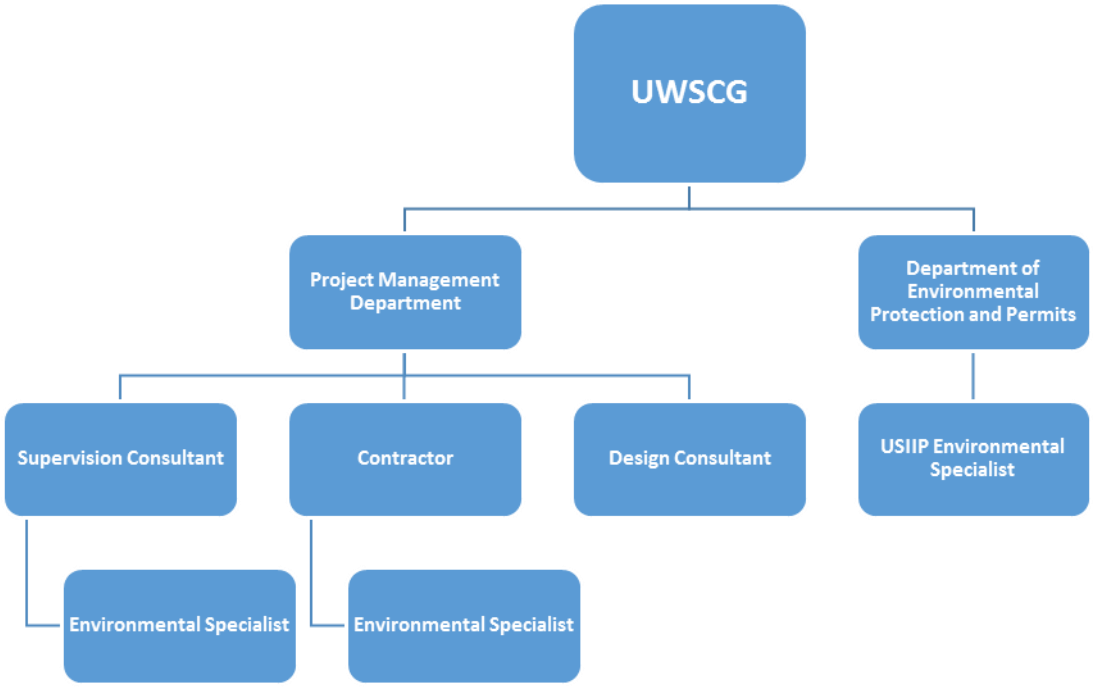


Figure 2: Structure Diagram of the Agencies Involved in Investment Program Implementation



28. Main organizations involved in the project and related to environmental safeguard are presented in the table 1 below:

Table 1: List of Main Organizations under USIIP/T6

Type of project participant	Name of Agency/Company	Environmental Staff	Name and contact details
Lender	Asian Development Bank	Head Office, Environmental Specialist, Portfolio, Results, Safeguards and Gender Unit (PSG), CWRD.	Nurlan Djenchuraev E-mail: ndjenchuraev@adb.org
		Associate Safeguards Officer Georgia Resident Mission Asian Development Bank	Nino Nadashvili Tel: +995 595 070442 nnadashvili@adb.org
		ADB RETA International-Regional Environmental Consultant	Keti Dgebuadze Tel: +995 577232937 ketdgeb@yahoo.com
Borrower	UWSCG	UWSCG, Department of Environmental Protection and Permits, Head	Ms. Maka Goderdzishvili Tel: +995 599 229925 E-mail: m.goderdzishvili@water.gov.ge
		UWSCG/IPMO Department of Projects Management, Head	Mr. Giorgi Archaia Tel: +995 577 380213 E-mail: G.Archaia@water.gov.ge
Borrower	UWSCG/USIIP/T6	Environmental Specialist	Ms. Ketevan Chomakhidze Tel: +995 577 380309 E-mail: Chomakhidzek@yahoo.com

Type of project participant	Name of Agency/Company	Environmental Staff	Name and contact details
Supervision Consultant	. Supervision Consultant: Hill International N.V. (Netherlands)	Environmental Specialist: .	Mr. Rezo Enukidze Tel: +995 599 164 469 E-mail: . r.enukidze@gmail.com
Contractor CHI-01	"Akkord Industry Construction Investment Corporation" OJSC (Azerbaijan)	EH&S Specialist	Environmental Specialist of CC: Name: Mr. Teodor Kalmakhelidze Tel: +995 598 977 977 E-mail: kalmakhelidzetedore@gmail.com
Contractor MAR-01	Akelik Group OJSC (Azerbaijan)	EH&S Specialist	Mr. Vakhtang Burchuladze Tel: +995 577477432 E-mail: v.burchuladze@akelik.ge
		HSE Manager	Mr. Natig Aliev E-mail: aliyevnatig@mail.ru Mob: +995 593 60 44 48
		HSE Engineer	Mr. Zaur Askerov E-mail: askerovzaur43@gamil.com Mob: +995 593 39 00 29

2.3 Project Activities During Current Reporting Period

29. During the reporting period, construction work under T6 were carried out within the framework of the CHI-01 and MAR-01 sub-projects and therefore in this Semi-annual EMR these two sub-projects are reported.

30. Construction activities under MAR-02 will be started when the final design is prepared and submitted by contractor to SC and UWSCG and finally agreed with ADB.

31. Date of Signature of Works Contract under CHI-01 sub-project is 21 August 2017. Commencement Date for the Works was 23 October 2017. The time for Completion of construction works was 540 days, with completion day by 15 April 2019. Revised time

32. for Completion is 790 days with revised completion date 21 December 2019. Defects Notification Period (DNP) is 365 days, ending on 14 April 2020.

33. The contract consists of the following works:

- The rehabilitation of the existing WS system by replacing the old pipework;
- Rehabilitation of Water Supply reservoir;
- Connection of the new pipes to the existing pipes;

34. More detailed information about the construction work performed during the reporting period under the project CHI-01 is presented in Table 2 below.

Table 2: Construction progress under CHI-01 project

Pipeline	Unit	Quantity (BoQ)	Cumulative to date	Progress
Main Transmission Line	m	15.858	16.005	100,09%
Distribution Network	m	66.470	67.855	102,1%
DN355 Bisi-CPS Transmission	m	745	700	94,0%
DN160 CPS-Lezhubani	m	2.165	2180	100,7%
DN160 CPS-Perevisi	m	1.237	1800	145,5%
DN225 CPS-Rustaveli	m	1.300	1264	97,2%
DN225 Lezhubani Res to PS	m	292	341	116,8%
Q200 ST Lezhubani PS - Memorial Res	m	1.645	2025	123,1%
Q100 ST Perevisi PS - Tekhisa Res	m	1.710	2053	120,1%
DN160 Memorial-Navardzeti	m	1.560	1470	94,2%
Total Laid Pipe	**m**	**91.422**	**94.223**	**103,06%**
House Connection	n	7,700	5545	72%
Crossings	n	10	9	90%
Reinstatement of Asphalt	m2	34.300	25,248	74%
Reinstatement of Concrete Pavement	m2	4.600	0	0%

35. During the reporting period the civil works under MAR-01 sub-project comprise mainly of the following items:

Marneuli:

a) One main water pumping station at Kolagiri and one booster pumping station at Jandari Reservoir

b) Transmission Line from Kolagiri PS to City Reservoir A (DCI DN 700)

c) New water supply network and rehabilitation of some pipelines

d) New sewer network and rehabilitation of some pipelines

e) Several railway-river/channel and road crossings

f) Related house connections

g) Rehabilitation of existing 18 wells and connection line (proposed as additional works and under negotiation with contractor)

Bolnisi:

a) New sewer network and rehabilitation of needed pipelines

b) New interceptor/collector sewer and Pumping Station to Marneuli

c) Related house connections

36. More detailed information about the construction work performed during the reporting period under the project MAR-01 sub-project is presented in Table 3 below.

Table 3: Construction progress under MAR-01 sub-project

No	Name of Materials	Unit	TOTAL	Total Executed Pipe Line
Water Supply Pipe line				
1	PE 100 Pipes Dn 50 PN16 mm, SDR 11	m	2,874.45	738.72
2	PE 100 Pipes Dn 63 PN16 mm, SDR 11	m	19,778.75	9,269.65
3	PE 100 Pipes Dn 75 PN16 mm, SDR 11	m	31,371.37	14,687.04
4	PE 100 Pipes Dn 90 PN16 mm, SDR 11	m	9,438.36	2,106.55
5	PE 100 Pipes Dn 110 PN16 mm, SDR 11	m	90,620.67	43,467.20
6	PE 100 Pipes Dn 125 PN16 mm, SDR 11	m	3,855.35	987.35
7	PE 100 Pipes Dn 140 PN16 mm, SDR 11	m	837.20	124.64
8	PE 100 Pipes Dn 160 PN16 mm, SDR 11	m	2,408.20	521.34
9	PE 100 Pipes Dn 180 PN16 mm, SDR 11	m	2,064.25	179.31
10	PE 100 Pipes Dn 200 PN16 mm, SDR 11	m	2,147.80	2,450.98
11	PE 100 Pipes Dn 225 PN16 mm, SDR 11	m	934.10	330.88

No	Name of Materials	Unit	TOTAL	Total Executed Pipe Line
12	PE 100 Pipes Dn 250 PN16 mm, SDR 11	m	4,712.90	1,931.79
13	PE 100 Pipes Dn 280 PN16 mm, SDR 11	m	277.80	-
14	PE 100 Pipes Dn 315 PN16 mm, SDR 11	m	3,977.40	3,220.25
15	PE 100 Pipes Dn 355 PN16 mm, SDR 11	m	276.90	-
16	PE 100 Pipes Dn 500 PN16 mm, SDR 11	m	2,556.70	-
	TOTAL		**178,132.20**	**80,015.70**
1	Corruqated HDPE Pipes DN 200	m	m	7,335.04
2	Corruqated HDPE Pipes DN 300	m	m	2,817.71
3	Corruqated HDPE Pipes DN 400	m	m	2,144.91
4	Corruqated HDPE Pipes DN 500	m	m	-
5	Corruqated HDPE Pipes DN 800	m	m	-
6	PE 100 Pipes Dn 110 PN16 mm, SDR 11	m	m	-
7	PE 100 Pipes Dn 225 PN16 mm, SDR 11	m	m	-
8	PE 100 Pipes Dn 315 PN16 mm, SDR 11	m	m	-
	Total		**182,708.50**	**12,297.66**
	Location		**Type of Activities**	**Progress on Implemented Works**
1	Jandari Reservoir		Civil Works	70%
2	Kolagiri Pumping Station		Civil Works	60%
3	City Reservoir		Civil Works	0%

2.4 Description of Any Changes to Project Design

37. The IEE for CHI-01 sub-project, which was prepared in August 2016, was updated in September 2019 due to changes in the project design, in particular, due to the construction of a crossing over the Kvirila River with a steel casing".

2.5 Description of Any Changes to Agreed Construction methods

38. During the reporting period no changes took place to the Construction methodology.

3. ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General Description of Environmental Safeguard Activities

39. Individual and joint on-site monitoring activities were conducted by Environmental Monitoring Specialist of SC, Mr. Rezo Enukidze and Environmental Specialist of USIIP Ms. Ketevan Chomakhidze on a regular basis, during the period July-December 2019. Also unscheduled monitoring visits were carried out and on-site instructions have been given to the contractor and its environmental team. Non-compliance notes have been issued to the contractor as needed. Mitigation measures have been instructed to Construction Companies to reduce major environmental impacts during the monitoring visits.

40. The monitoring activities included:
- The monitoring of compliance of construction activities under CHI-01 project sites to the IEE/EMP requirements;
- The monitoring of compliance of construction activities under MAR-01 project sites to the IEE/EMP requirements;

41. During the reporting period Mr. Teodor Kalmakhelidze, who conducted daily monitoring of construction sites, developed monthly monitoring reports and represented in SC / Hill.

42. Environmental, H&S Specialist, Mr. Vakhtang Burchuladze hired by Contractor under the MAR-01 sub-project conducted the day-to-day monitoring of the construction sites, developed the monthly monitoring reports and submitted to SC / Hill.

43. Environmental Monitoring Specialist, Ms. Rezo Enukidze hired by Supervision Company under USIIP/T6 developed quarterly monitoring reports for UWSCG/USIIP based on the monthly reports submitted by Contractor, and environmental monitoring of construction sites.

44. Environmental Specialist of UWSCG/USIIP, Ms. Ketevan Chomakhidze performed monitoring of contractor's performance with the approved EMPs and SSEMPs, environmental standards and other environmental commitments of the contractor. ES developed Semi-annual Environmental Monitoring Reports (SAEMR) and submitted to ADB based on the quarterly reports prepared by SC and monitoring results of construction sites.

45. The construction activities affecting the environment during the reporting period are as follows:
- Excavation works
- Removal of Top Soil
- Removal of Surplus Soil
- Backfilling of Trenches

46. In accordance with the IEE, and the accompanying Environmental Monitoring Plan (EMP), the Contractor is required to undertake parametric measurements and observations on air quality, noise and socio-cultural resources. The monitoring guidelines were set as shown in the Table 4 below.

Table 4: Parametric Measurement Guidelines

Parameters	Frequency & Location	Remarks
CHI-01		
Air Quality	Air Quality Reservoirs, Networks, Transmission Main	Watering site during excavation works to avoid dust spreading Conduct measurements of Dusts Mg/m3; CO Mg/m3; NO2 Mg/m3; SO2 Mg/m3
Noise	Noise, Quarterly Reservoirs, Networks, Transmission Main	Ensure that all equipment & vehicles used for construction activity are in good condition Limiting working hours to 8 am – 6 pm
Incorrect surplus/waste soil management	Monthly during the site Inspection and audit	Utilize surplus/waste soil for beneficial purposes such as in construction or to raise the ground-level of low lying sites. Dispose extra waste soil at special disposal place identified by Municipality
Cultural heritage Disturbance to cultural resources	Every time along the alignment Archaeological & Cultural Properties	Contractor shall put in place a protocol for conducting any excavation work, to ensure that any chance finds are recognized and measures are taken to ensure they are protected and conserved. Calling in the state archaeological authority if a find is suspected, and taking any action they require to ensure its removal or protection.
MAR-01		
Air Quality	Air Quality Reservoirs, Networks, Transmission Main	Watering site during excavation works to avoid dust spreading

Parameters	Frequency & Location	Remarks
		Conduct measurements of Dusts Mg/m3; CO Mg/m3; NO2 Mg/m3; SO2 Mg/m3
Noise	Noise, Quarterly Reservoirs, Networks, Transmission Main	Ensure that all equipment & vehicles used for construction activity are in good condition Limiting working hours to 8 am – 6 pm
Incorrect surplus/waste soil management	Monthly during the site Inspection and audit	Utilize surplus/waste soil for beneficial purposes such as in construction or to raise the ground-level of low lying sites. Dispose extra waste soil at special disposal place identified by Municipality
Cultural heritage Disturbance to cultural resources	Every time along the alignment Archaeological & Cultural Properties	Contractor shall put in place a protocol for conducting any excavation work, to ensure that any chance finds are recognized and measures are taken to ensure they are protected and conserved. Calling in the state archaeological authority if a find is suspected, and taking any action they require to ensure its removal or protection.

47. There are no protected areas, wetlands, mangroves, or estuaries. Trees, vegetation (mostly shrubs and grasses), and animals in the subproject sites are those commonly found in built-up areas. The geological structure of the area is stable and no potential land subsidence is foreseen.

3.2 Site Audit

48. Regular inspection and monitoring of construction sites under CHI-01 and MAR-01 sub-project were conducted by ESs of USIIP and SC/HILL. The schedule of Joint inspection and summary of audits carried out under sub-projects are provided in the Table 5 below.

Table 5. Summary of site audits for CHI-01 or MAR-01sub-projects.

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Implemented Actions
Continuously during reporting period (July-December 2019)	"Akkord Industry Construction Investment Corporation" OJSC CHI-01	Environmental, H&S Specialist of Contractor Mr. Teodor Kalmakhelidze	Day to day monitoring of sites Compliance with Environmental and HES requirements	Environmental, Health and safety issues on construction sites,	Prepare Monthly Environmental Monitoring Reports and send to SC
		Environmental Specialist of Supervision Company HILL Mr. Rezo Enukidze	Compliance with Environmental safeguard requirements	Environmental issues on construction sites	Prepare Quarterly Environmental Monitoring Reports and send to UWSCG Issue non-compliance if necessary
19 July 2019		Head Office, Environmental Specialist Mr. Duncan Lung RETA International Environmental Consultant of ADB under RETA 8663 - Ms. Keti Dgebuadze. Environmental Specialist of USIIP Ms. Ketevan Chomakhidze Environmental Specialist of Supervision Consultant HILL Mr.Rezo Enukidze	GEO Country Safeguards Review Mission	SC to employ national H&S officer to provide the supervision of the Contractor and their safety team – Q3, 2019. No yet Completed CC to sign agreement with licensed company for disposal of hazardous waste. Completed CC H&S Officer to prepare log book for fixing accidents and near misses and kept at camp site.	Prepare Mission's note and submit to CC and SC

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Implemented Actions
				Completed GRM log book to be prepared and kept at camp site. Completed Reinstatement by asphalt layer of tranches within Chiatura network as far as possible as these present driving hazard and community annoyance. Partially completed CC through engineer to complete a full incident report form, providing all details of the incident including lessons learned section. Not yet prepared Engineer to identify what has or hasn't been paid to victim's family and what is required under the law and under contract. Under investigation	

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Implemented Actions
				Engineer to audit health facilities, first aiders, training and H&S staffing adequacy in light of the incident. Completed Engineer should also review whether any first aid equipment is needed on site to provide first aid. Completed	
19 August 2019		Environmental Specialist of SC Mr. Rezo Enukidze Environmental, H&S Specialist of Contractor Mr. Teodor Kalmakhelidze	Monthly monitoring of sites	Storage territory internally should be arranged properly and cleaned regularly The Camp yard should be covered with gravel	Verbal instruction was given to contractor to improve the situation
16 September 2019		Environmental Specialist of USIIP Ms. Ketevan Chomakhidze Environmental Specialist of SC Mr. Rezo Enukidze Environmental, H&S Specialist of Contractor Mr. Teodore Kalmakhelidze	Monthly monitoring of sites	Construction site should be properly fenced from all sides and equipped with lockable gate Proper warning and information signs should be arranged at the entrance and perimeter of the site High visible safety signs/tapes and trench side	Verbal instruction was given to contractor improve the situation

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Implemented Actions
				barriers around of deep open excavation should be installed from all sides to avoid accidents of local population Soil (surplus/accumulated soil) for backfilling purposes should be managed/stored properly on the territory primarily agreed with the Municipality Workers always should use complete PPE and Safety norms during working at height should be provided Construction waste should be timely removed from the construction site and disposed properly Containers with fuel/lubricant should be managed properly (stored at the proper organized place with concrete floor and roofing) to avoid leakage and ground contamination All construction materials should	

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Implemented Actions
				be properly segregated and stored adequately Proper waste containers should be installed and labeled (Household waste and Hazardous waste) Waste should be placed only at the proper waste container and discharged timely Site internally should be arranged properly and cleaned regularly	
22 November 2019		Environmental Specialist of SC Mr. Rezo Enukidze Environmental, H&S Specialist of Contractor Mr. Teodor Kalmakhelidze	Monthly monitoring of sites	Housekeeping at sites is on a very poor level Workers always should use complete PPE and Safety norms during working at height should be provided	Verbal Instructions given to contractor.
20 December 2019		Environmental Specialist of SC Mr. Rezo Enukidze		Soil (surplus/accumulated soil) for backfilling purposes should be managed/stored properly on the territory primarily agreed with the Municipality	Verbal Instructions given to contractor.
Continuously during reporting period (January-June 2019)	"Akelik Group OJSC" (Azerbaijan)	Environmental, H&S Specialist of Contractor	Day to day monitoring of sites	Safety issues on construction sites, Workers always	Prepare Monthly Environmental

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Implemented Actions
	MAR-01	Mr. Vakhtang Burchuladze	Compliance with Environmental and HES requirements	should use complete PPE	Monitoring Reports and send to SC
		Environmental Specialist of Supervision Company HILL Mr. Rezo Enukidze	Compliance with Environmental and HES requirements	Poor Housekeeping	Prepare Quarterly Environmental Monitoring Reports and send to UWSCG Issue non-compliance if necessary
25 July 2019		Head Office, Environmental Specialist Mr. Duncan Lung RETA International Environmental Consultant of ADB under RETA 8663 - Ms. Keti Dgebuadze. Environmental Specialist of USIIP Ms. Ketevan Chomakhidze Environmental Specialist of Supervision Consultant HILL Mr.Rezo Enukidze	GEO Country Safeguards Review Mission	SC to audit CC first aid and health facilities to see if adequate and to provide a report to the PIU outlining recommendations CC requested for water supply and waste water network to fully reinstate using a sectional approach with finished asphalt to reduce road safety risks and public nuisance. CC to ensure waste and hazardous liquids are stored correctly at the camp in secondary containment.	Verbal instruction was given to contractor to improve the situation

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Implemented Actions
				CC to finish installation of fencing from all sides of the camp territory.	
13 September 2019		Environmental Specialist of USIIP Ms. Ketevan Chomakhidze Environmental, H&S Specialist of Contractor Mr. Vakhtang Burchuladze Environmental Specialist of Supervision Consultant HILL Mr.Rezo Enukidze	Regular Environmental monitoring of sites	Baseline Environmental Quality Measurement of Noise, Air and Vibration to be conducted before starting any construction activities The amount of Top Soil indicated in the relevant SEMP must be properly stored Construction site should be properly fenced from all sides and equipped with lockable gate Proper warning and information signs should be arranged at the entrance and perimeter of the site High visible safety signs/tapes and trench side barriers around of deep open excavation should be installed from all sides to avoid accidents of local population Soil (surplus/accumul	Verbal instruction was given and Non-Compliance Notice was issued to contactor (Please see Annex C)

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Implemented Actions
				ated soil) for backfilling purposes should be managed/stored properly on the territory primarily agreed with the Municipality Workers always should use complete PPE and Safety norms during working at height should be provided Construction waste should be timely removed from the construction site and disposed properly Containers with fuel/lubricant should be managed properly (stored at the proper organised place with concrete floor and roofing) to avoid leakage and ground contamination All construction materials should be properly segregated and stored adequately Proper waste containers should be installed and labeled (Household waste and Hazardous waste) Waste should be	

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Implemented Actions
				placed only at the proper waste container and discharged timely Site internally should be arranged properly and cleaned regularly	
18 October 2019		Environmental Specialist of Supervision Consultant HILL Mr.Rezo Enukidze Environmental, H&S Specialist of Contractor Mr. Vakhtang Burchuladze	Monthly monitoring of sites	Construction waste should be timely removed from the construction site and disposed properly. The contractor was instructed to take all responsible steps to protect the environment and ensure that emissions, surface discharges and effluent from contractor's activities not to exceed the values stated in the spesifications or prescribed by applicable laws.	Non-Compliance Letter issued by SC (Please see Annex A)
10 December 2019		Environmental Specialist of Supervision Consultant HILL Mr.Rezo Enukidze Environmental Specialist of	Monthly monitoring of sites	Containers with fuel/lubricant should be managed properly (stored at the proper organised place with concrete floor and roofing) to avoid leakage and ground	Verbal instruction was given to contractor to improve the situation

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Implemented Actions
		USIIP Ms. Ketevan Chomakhidze Environmental, H&S Specialist of Contractor Mr. Vakhtang Burchuladze		contamination	

3.3 Issues Tracking (Based on Non-Conformance Notices)

49. Non-Conformances have been observed during the site visits under CHI-01 and MAR-01 sub-projects. The contractors were always informed on the detected non-conformances and were demanded to improve on the deadline set and send photos of improvements. Environmental team of HILL and UWSCG/USIIP monitored the improvements during the next monitoring visits. All Non-conformance Notices issued during the reporting period is presented in ANNEX C of this Semi-Annual EMR.

50. A summary of the identified environmental issues for January-June 2019 is presented in table 6 and Table 7 below.

Table 6: Summary of Issues Tracking Activity for Current Period CHI-01

Summary Table CHI-02

Total Number of Issues for Project	21
Issues Opened This Reporting Period	3
Issues Closed This Reporting Period	18
Percentage Closed	85%

Table 7: Summary of Issues Tracking Activity for Current Period MAR-01

Summary Table MAR-01

Total Number of Issues for Project	22
Issues Opened This Reporting Period	3

Issues Closed This Reporting Period	19
Percentage Closed	86%

3.4 Trends

51. Summary of identified trends under CHI-01 and MAR-01 sub-projects during the reporting period – January-June 2019 is presented in the table 8 below.

Table 8: Summary of identified trends in environmental issues

Semi-Annual EMR No	Total No of Issues	% issues Closed	% issues closed late
January-June 2019	51	77%	23%
July-December 2019	43	86%	14%

52. All major Non-Conformances under USIIP/T6 during the reporting period are provided in an Annex C of this report.

3.5 Unanticipated Environmental Impacts or Risks

Not yet applicable

4. RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted during Current Period

53. During the reporting period Environmental measurements of Noise level and ambient air Quality were carried out by contractor under CHI-01 sub-project.

54. Noise and air pollution standards defined by IFC/WHO 1999, are presented in the Table 9 and 10 below.

Table 9: Noise Level Guidelines

Noise	dBA National Regulations		dBA WHO	
Receptor	Daytime 07:00 - 22:00	Nighttime 22:00 - 07:00	Daytime 07:00- 22:00	Nighttime 22:00- 07:00
Residential; institutional; educational	55	45	55	45
Industrial; commercial	70	70	70	70

55. Air pollution standards by IFC/WHO 1999, are presented in the Table 10 below.

Table 10: Air pollution Guidelines

Contaminants	IFC/WHO Guideline Value (Limit) mg/m^3))
1	2
Inorganic dust	(*IFC does not have a standard for "inorganic dust". Instead IFC applies standards for PM2.5 and PM10). PM10 – 0,02/1 Year 0,05/24 Hour PM2,5-0,01/1 Year 0,025/24 Hour
Carbonic monoxide	n/a
Nitrogen dioxide (NO_2)	0,2/ 1 Hour 0,04/1 Year
Aldehyde	n/a

56. Environmental quality measurements of noise, vibration ambient air quality under CHI-01 sub-project were conducted by Ltd "NaSeTo Group" on December 2019 (Date of submission of Measurement data is January 19, 2020, please see Annex A). Location and data are included

in the table 11 below. The next monitoring measurements will be conducted in May 2020 and results will be reflected in the next January-June EMR 2020.

57. According to data received in January 2020 noise level exceeds the standards of the National Regulations and World Health Organization (IFC/WHO),1999 in Chiatura and therefore additional mitigation measures are required and presented in Table17: Recommendations to Address Environmental Issues under CHI-01 sub-project. IFC/WHO standards for Noise and Air pollution are presented in Tables 9 and 10 above. It should be noted also that environmental quality measurements were carried out at the nearest sensitive receptors of construction sites, were temporary and conducted during the daytime from 14:00pm to 16:20pm and no complaints were received from the local population about the noise during the reporting period.

Table 11: Environmental Quality Measurement Noise, Vibration, Dust

Measurement Point	**Measurement Results**								
Dust, Air Pollution, Noise and Vibration									
Location	Coordinates	[1]Noise dBA (1-hour)	Vibro Speed		Vibro Acceleration		Dust Mg/M^3		
			mm/s	db	m/s^2	db	PM_{25}	PM_{10}	Total
Chiatura BiCi Reservoir	38T0360054 4683292	63,4	<0,1	<66	<0,1	<0,100	0.076	0.092	0.125
"Sahkere Chiatura Road" 61km`	38T035379 4686963	79.4	<0,1	<66	<0,1	<0,100	0.034	0.067	0.098
Chiatura Leguban Reservoir	38T0357841 4684386	<0,1	<66	<0,1	<0,100	<0,1	0.028	0.047	0.083
Chiatura Chavchavadze 18	38T0358296 4682951	<66	<0,1	<0,100	<0,1	<0,1	0.081	0.106	0.237
Nitrogen and Sulfur Dioxide, Carbon Monoxide and Total Hydrocarbon Air Pollution Measurement Results									
Location	Coordinates	Nitrogen Dioxide	Sulfur Dioxide		Carbon Monoxide		Total Hydrocarbons		
Chiatura BiCi Reservoir	38T0360054 4683292	0.048	<0.01		0,19		<0.1		
"Sachkere Chiatura Road" 61km`	38T0357841 4684386	0.008	<0.01		0.96		0.1		
Chiatura	38T0357841	0.025	<0.01		0.27		<0.1		

[1] This data for noise propagation is the Maximum and Average will be obtained for the next reporting period and reflected in the next SAEMR - January-June 2020.

Leguban Reservoir	4684386				
Chiatura Chavchavadze 18	38T0358296 4682951	0.059	<0.01	2.37	<0.1

58. Environmental quality measurements of noise, vibration ambient air quality under MAR-01 sub-project were conducted by contractor on 26 July 2019 and 25 December 2019. Location and data are included in the table 12 below.

59. According to data received in 26 July 2019 noise level exceeds the standards of the National Regulations and World Health Organization (IFC/WHO),1999 in Marneuli and therefore additional mitigation measures are required and presented in Table17: Recommendations to Address Environmental Issues under MAR-01 sub-projects. IFC/WHO standards for Noise and Air pollution are presented in Tables 9 and 10 above. It should be noted also that environmental quality measurements carried out at the nearest sensitive receptors of construction sites, were temporary and conducted during the daytime from 12:10 am to 16:00pm and no complaints were received from the local population about the noise during the reporting period.

Table 12: Environmental measurements results:

N	Location	GPS coordinates WGS 84	Measurement Results					
			Dust (PM) Mg/M^3		(CO) mg/m^3	Noise dBA (1-hour)		Vibration mm/s^2
			Results	Permissible	Results	Results	Permissible	
26 July 2019								
1	Marneuli, Jandari Reservoir	N4594928 E482960	0.058	0.15-average 0.5 max.	0.41	54	55	0
2	Marneuli CAMP	N4594089 E485290	0.062		0.22	49	85	0
4	Qolagiri Headwork 20m from existing PS	N4588135 E476313	0.049		0.18	63	85	0.01
5	Marneuli Tsereteli Street (begining)	N4588720 E484536	0.074		0.18	54	85	0
6	Marneuli Tsereteli Street (end)	N4587164 E485205	0.081		0.24	53	55	0
25 December 2019								
1	Marneuli, Jandari Reservoir (3m from nearest house) Power	N4594930 E482888	0.036			57.4	55	0

	generator was turned on within 25 m from the house							
2	Marneuli construction CAMP	N4594096 E485275	0.048			47	85	0
3	Qolagiri Headwork 20m from existing PS	N4588169 E476315	0.039			62	85	0
4	79 Rustaveli street		0.041			53	55	0

4.2 Trends

60. All mitigation measures identified within the IEE/EMP, SEMPs under CHI-01 project are effective and no additional measures are required.

4.3 Summary of Monitoring outcomes

61. Noise level during the construction period under CHI-01 sub-project exceeds the existing standards of IFC/WHO and therefore the following additional mitigations measures are required: Plan activities in consultation with SC and IPMO/UWSCG so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance; Noisy construction activities will be avoided during night time; All construction equipment and vehicles shall be well maintained, regularly inspected for noise emissions. Environmental Specialists of SC and UWSCG/USIIP will monitor the improvements under CHI-01 sub-project and reflect findings in the next Semi-annual EMR in January-June 2020.

4.4 Material resources Utilization

4.4.1 Current Period

62. The following information were provided by the contractor under CHI-01 sub-project about the material resources utilized during the reporting period July-December 2019.

Table13: Material Resources Utilized under CHI-01 sub-project

Item	Quantity
Water	2271 m^3
Electricity	46646 kw
Natural Gas	10952 m^3

63. The following information was provided by the contractor within the framework of the MAR-01 sub-project on the use of material resources during the reporting period – January-June 2020.

Table14: Material Resources Utilized under MAR-01 sub-project

Item	Quantity

Water	3,030.00 m^3
Electricity	32,600.00 kw
Natural Gas	1450.00 m^3

4.4.2 Cumulative Resources Utilization

N/A

4.5 Waste Management

4.5.1 Current Period

64. At the construction sites under the CHI-01 and MAR-01 sub-projects are mainly produced household, construction (inert, surplus soil) and hazardous waste.

65. Mainly household waste is collected in municipal containers. Local municipality is responsible for the disposal of household waste.

66. The local Municipality of Chiatura is responsible for the disposal of household waste under CHI-01 sub-project, LTD "Sanitary" is constructed by contractor "AKKORD" for the disposal of hazardous waste. For disposal of Inert waste the special place is allocated for contractor which is previously agreed with the Municipality of Chiatura.

67. Amount of Solid Waste generated during the reporting period within the framework of the CHI-01 sub-project is presented in the table 15 below.

Table 15: Amount of Solid Waste (CHI-01)

Type of Waste	Quantity
Household Waste	120 m^3

68. Hazardous waste (lubricant residues and etc) were stored according to all the safety norms after the strong instruction given by SC and UWSCG. Also contractors have special container with proper labelling at the construction site.

69. Amount of Solid Waste generated during the reporting period within the framework of the MAR-01 sub-project is presented in the table 16 below.

Table 16: Amount of Solid Waste (MAR-01)

Type of Waste	Quantity
Household Waste	180 m^3

70. The local Municipality of Marneuli is responsible for the disposal of household waste under MAR-01 sub-project.

4.5.2 Cumulative Waste Generation

Not yet applicable.

4.6 Health and Safety

4.6.1 Community Health and Safety

71. No community incidents have been reported by SC during reporting period under CHI-01 and MAR-01sub-projects.

4.6.2 Worker Safety and Health

72. Environmental H&S specialist of contractor under CHI-01 sub-project Mr. Tengo Kalmakhelidze was performing day-to-day monitoring of Health & Safety on the Sites and press the Contractor to improve the provision of trench barriers in roads and to provide suitable work boots for the labour force.

73. It should be noted that SC does not have a dedicated staff member responsible for H&S, despite numerous discussions with SC initiated by ADB and an oral agreement with SC, no progress has been made so far.

74. Health & safety and environment issues which were covered during the reporting period are as follows:

- Ground works;
- Manual works;
- Removal waste;
- PPE;
- Housekeeping;
- Reinforcement;
- Dust and Noise Measurements
- Upgrade Safety Hard and Warning Barricade

75. The following Near-Misses were reported by SC under CHI-01 sub-project, which may be resulted in community and workers' Health and Safety problems:

- Safety issues on construction sites, Workers always should use complete PPE;
- Single row of plastic security tape acting as a fence which is inadequate and ineffective. In addition, no night warning lamps are being used for the open trenches

76. During the ADB's Safeguard Mission, on July 19, 2019 Supervision Consultant HILL was strictly requested to audit health facilities, first aiders, training and H&S staffing adequacy in light of the [2]incident under CHI-01 sub-project. Engineer would be reviewed whether any first aid equipment was needed on site to provide first aid.

77. All of the above requirements were implemented by contractor during the reporting period as part of the CHI-01 subproject. First aid equipment was installed at the sites. Training tools were developed and first aid training were provided by the Certified person

[2]On June 25, 2019, when approaching to the entrance gate to the Contractor's yard, Mr. Khvicha Macharashvili sustained a gash to his head when struck by a piece of reinforcing steel cast aside unknowingly by the driver of a vehicle who wished to enter the gate but was unable to do so because of the reinforcing steel holding the gate in the closed position. Mr. Macharashvili was detained in hospital for several days for observation.

In the same day after the incident/injury of the Security Guard in 20 min. interval Mr. Ambrosi Modebadze, was apparenlty boarding a minibus to return to Site after eating lunch at the canteen in the Contractor's yard, when it seems he suffered a heart attack. An ambulance was called, but it took twenty minutes to arrive, after which the responders pronounced Mr. Modebadze dead at the scene, seemingly without any efforts to resuscitate him. The police later arrived and apparently declared that there were no suspicious circumstances and no criminal case to answer, and the body was returned to the family.

of the contractor by Mr. Teodor Kalmakhelidze (Training toolbox and attendance list is provided in the Annex E).

78. During the reporting period, Near-Misses were identified contractor during the monitoring of the site visit within the framework of the MAR-01 subproject. These Near Missis include the following cases, the excavator operator stated that the worker enter and exit the unprotected trench during the construction works.

79. The following Preventing measures were implemented, the shuttering of the trench was executed for protection of the trench from collapse.

80. SC and UWSCG / USIIP strictly requested from contractor to adequately fill the Near Misses forms and reflect in their monthly monitoring reports (Near Misses form filled by contractor are provided in the Annex D of this report).

4.7 Training

81. On site environmental safeguard training were conducted for environmental team of MAR-01 sub-projects on a regular bases. Environmental specialists of contractors were introduced with all necessary safeguard requirements of ADB/SPS 2009.

82. As the same requirements in terms of auditing the health facilities, first aiders, training and H&S staffing adequacy applied to the contractor under MAR-01 sub-project as well, contractor installed the first aid facilities, developed the first aid training tools and trained the staff adequately.

5. FUNCTIONING OF THE SEMP

5.1 SEMP Review

83. During the reporting period Location Specific EMP was prepared and approved under MAR-01 sub-project for Marneuli City A Reservoir.

84. The following SEMPS have been updated due to the changes in project design under CHI-01 sub-project.

- SEMP for Sachkhere reservoir (December 2019)
- SEMP for Bisi Reservoir (December 2019)

85. The following SEMPs have been prepared and approved under CHI-01 and MAR-01 sub-project during the previous reporting periods:

CHI-01 Sub-project:

- SEMP for CAMP site (approved in August 2018)
- SEMP for Sachkhere Reservoir (approved in August 2018);
- SEMP for Bisi Reservoir (approved in September 2018);
- SEMP for Lezhubani Reservoir (approved in September 2018);
- SEMP for Navardzeti Reservoir (approved in September 2018);
- SEMP for Perevisy Reservoir (approved in September 2018);
- SEMP for Rustaveli reservoir (approved in September 2018);
- SEMP for Tekhisa Reservoir (approved in September 2018);
- SEMP for Chiatura Well fields (approved in November 2018)

MAR-01 sub-project:

- SEMP for Jandary Reservoir (approved in March 2019)
- SEMP for Kolagiri Pumping Station (approved in March 2019);
- SEMP for CAMP (approved in May 2019)
- SEMP for City Reservoir

86. All SEMPs were prepared by Contractor, endorsed by SC and approved by UWSCG. SEMPs were reviewed/commented by the RETA International Environmental Consultant of ADB under RETA 8663 - Ms. Keti Dgebuadze.

87. SSEMP for Construction of Marneuli WWTP, under MAR-02 sub-project will be prepared by contractor, endorsed by SC and approved by UWSCG after review and comments from ADB during the next reporting period, January-June 2020.

6. GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good Practice

Not yet applicable.

6.2 Opportunities for Improvement

Not yet applicable.

7. SUMMARY AND RECOMMENDATIONS

7.1 Summary

88. During the reported period construction activities were implemented under CHI-01 and MAR-01 sub-projects. Contractors have intensified all activities to improve the progress of the works on sites. Individual and Joint on-site monitoring activities were conducted by Environmental Monitoring Specialist of SC/HILL and UWSCG/USIIP on a regular basis.

89. Day-to-day monitoring of the construction sites were carried out by the environmental Specialists of Contractor, monthly monitoring reports were developed and sent to Supervision Consultant.

90. Environmental Monitoring Specialist of Hill, Mr. Rezo Enukidze conducted monthly monitoring of project sites under T6 and developed Non-Conformance Notice were required. He also developed quarterly environmental monitoring reports based on the monthly reports submitted by Contractor and environmental site inspections and submit to UWSCG.

91. The monitoring activities included monitoring of compliance of construction activities to the IEE/EMP and SEMP requirements under CHI-01 and MAR-01 sub-projects.

92. Environmental Specialist of USIIP Ms. Kate Chomakhidze performed monitoring of contractor's performance in accordance with the requirements of approved IEE/EMPs, SEMPs, and other environmental commitments of the contractor. USIIP/ES developed Semi-annual monitoring reports and submitted to ADB based on the quarterly reports prepared by SC and results of monitoring of construction sites.

93. Also unscheduled monitoring visits were carried out and Non-Conformance Notice has been issued to the contractor by the environmental specialist of UWSCG/USIIP if needed. Mitigation measures in order to reduce major environmental impacts have been instructed to CCs during the monitoring visits as well.

94. In accordance with the IEE, and the accompanying Environmental Monitoring Plan (EMP), the Contractor is required to undertake parametric measurements and observations on air quality and noise.

95. Noise level exceeded the existing standards of national and international regulations under CHI-01 and MAR-01 sub-project. Additional mitigation measures to improve the situation is provided in the Table 17 below.

7.2 Recommendations

96. During the reporting period, from July-December 2019, the T6 of Investment Program was implemented in accordance with the requirements of ADB - SPS 2009 and the National Legislation.

97. More detailed recommendations for the implementation of T6 during the next reporting period January-June 2020 are provided in the table 17 below:

Table 17: Recommendations to Address Environmental Issues under CHI-01 sub-project

Recommendations CHI-01 sub-project	
Recommendations CHI-01	**Implementation status and date**
Storage territory internally should be arranged properly and cleaned regularly.	The contractor is given a strong instruction to improve the situation by the mid-January 2020 and constantly maintain an improved standard.
Reinstatement by asphalt layer of tranches within Chiatura network as far as possible as these present driving hazard and community annoyance.	
CC through engineer to complete a full incident report form, providing all details of the incident including lessons learned section.	
Noise from the construction activities should not cause disruption and nuisance to nearby community and other sensitive receptors (i.e. school, hospitals).	Instruction are given to contractor to improve the situation and to conduct following mitigation measures by the January 2020: Plan activities in consultation with SC and IPMO/UWSCG so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance; Noisy construction activities will be avoided during night time; All construction equipment and vehicles shall be well maintained, regularly inspected for noise emissions; Impose speed limits on construction vehicles to minimize emissions along areas where sensitive receptors are located (i.e. temples, hospitals, schools, houses) Install noise barriers (e.g.,

Recommendations CHI-01 sub-project	
	panels, curtains, or partitions) to reduce the emission of engine noise. Conduct meetings with population and provide information related to schedule of construction activities and noise caused by the project activities.
Recommendations MAR-01	**Implementation Status and Date**
Construction site should be properly fenced from all sides and equipped with lockable gate	The contractor is given a strong instruction to improve the situation by the mid July 2019 and constantly maintain an improved standard.
Proper warning and information signs should be arranged at the entrance and perimeter of the site	
High visible safety signs/tapes and trench side barriers around of deep open excavation should be installed from all sides to avoid accidents of local population	
Noise from the construction activities should not cause disruption and nuisance to nearby community and other sensitive receptors (i.e. school, hospitals).	Instruction are given to contractor to improve the situation and to conduct following mitigation measures by the July 2019 Plan activities in consultation with SC and IPMO/UWSCG so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance; Noisy construction activities will be avoided during night time; All construction equipment and vehicles shall be well maintained, regularly inspected for noise

Recommendations CHI-01 sub-project	
	emissions; Impose speed limits on construction vehicles to minimize emissions along areas where sensitive receptors are located (i.e. temples, hospitals, schools, houses) Install noise barriers (e.g., panels, curtains, or partitions) to reduce the emission of engine noise. Conduct meetings with population and provide information related to schedule of construction activities and noise caused by the project activities.

98. Conduct monitoring of Noise and Air quality under CHI-01 project at the nearest sensitive receptors on the quarterly basis. The schedule of environmental quality measurements to be carried out during the next reporting period, January-June 2010 is presented in the table 18 below.

Table 18: Conduct Monitoring of Environmental Quality under CHI-01 project

Parameters	Quarterly measurement
Dust	March, June 2020
Vibration	March, June 2020
Carbon monoxide	March, June 2020
Nitrogen dioxide	March, June 2020
Noise	March, June 2020

99. Conduct baseline and quarterly monitoring of Noise and Air quality under MAR-01 project at the nearest sensitive receptors. The schedule of environmental quality measurements to be carried out during the next reporting period, January-June 2020 is presented in the table 19 below.

100. SSEMP for MAR-02 will prepared by contractor by the mid. of March 2020.

Table 19: Conduct Monitoring of Environmental Quality under MAR-01 project

Parameters	Quarterly measurement
Dust	March, June 2020
Vibration	March, June 2020
Carbon monoxide	March, June 2020
Nitrogen dioxide	March, June 2020
Noise	March, June 2020

ANNEXES

ANNEX A: ENVIRONMENTAL QUALITY MEASUREMENT DATA

Measurements Data – CHI-01

საქართველო
შპს „ნასეტო გრუპ“

GEORGIA
LTD "NaSeTo Group"

საქართველო, ქუთაისი, ხუნდაძის 65, email: nato-gaburia@mail.ru, ტელ. 595-270-451, TBC ა/ა № GE29TB7064236020100019
Georgia, Kutaisi, Khundadze str. 65, , email: nato-gaburia@mail.ru, tel. 595-270-451, TBC bank № GE29TB7064236020100019

ღია სააქციო საზოგადოების "აკორდ ინდუსტრიული სამშენებლო საინვესტიციო კორპორაციის" წარმომადგენლობა საქართველოში "აკკორდ ჯორჯია"

Open Joint Stock Company "Akkord Industrial Construction Investment Corporation" in Georgia "Akkord Georgia"

ჰაერის მტვერით დაბინძურების, ხმაურის და ვიბრაციის გაზომვების შედეგები
19.01.2020 $14^{00} - 16^{20}$

Dust air pollution, noise and vibration measurements on 19.01.2020 $14^{00} - 16^{20}$

№	გაზომვის წერტილის Measurement point		გაზომვის შედეგები Measurement results							
	ადგილ მდებარეობა Location	კოორდი-ნატები Coordinates	ხმაური Amax დბ Noise Amax db	ვიბრო სიჩქარე Vibro Speed		ვიბრო აჩქარება Vibro acceleration		მტვერი მგ/მ³ Dust mg / m3		
				მმ/წმ mm/s	დბ db	მ/წმ² m/s²	დბ db	$Pm_{2.5}$	Pm_{10}	Total
1	ჭიათურა, BiCi რეზერვუარი Chiatura, BiCi Rezervoir	38T0360054 4683292	63,4	<0.1	<66	<0.1	<100	0.067	0.092	0.124
2	საჩხერე - ჭიათურა 61კმ, Sachkhere - Chiatura, road 61km	38T0365372 4686965	71,2	<0.1	<66	<0.1	<100	0.034	0.067	0.098

3	ჭიათურა, ლეჭუბნის რეზერვუარი Chiatura, Leguban, Reservoir	38T0357841 4684386	61,3	<0.1	<66	<0.1	<100	0.028	0.047	0.083
4	ჭიათურა, ჭავჭავაძის 18 Chiatura, Chavchavadze 18	38T0358296 4682951	82,1	0,1	66	0,1	100	0.081	0.106	0.237

ჰაერის აზოტის და გოგირდის დიოქსიდით, ნახშირბადის მონოჟანგით და ჯამური ნახშირწყალბადებით დაბინძურების გაზომვების შედეგები
19.01.2020 $14^{00} - 16^{20}$

Nitrogen and sulfur dioxide, carbon monoxide and total hydrocarbon air pollution measurement results 19.01.2020 $14^{00} - 16^{20}$

№	გაზომვის წერტილის Measurement point		გაზომვის შედეგები მგ/მ³ Measurement results mg/m³			
	ადგილ მდებარეობა Location	კოორდი-ნატები Coordinates	აზოტის დიოქსიდი nitrogen dioxide	გოგირდის დიოქსიდი sulfur dioxide	ნახშირბადის მონოჟანგი carbon monoxide	ჯამური ნახშირწყალბადები total hydrocarbons
1	ჭიათურა, BiCi რეზერვუარი Chiatura, BiCi Rezervoir	38T0360054 4683292	0.048	<0.01	0,19	<0.1
2	საჩხერე - ჭიათურა 61კმ, Sachkhere - Chiatura, road 61km	38T03653724 686965	0.008	<0.01	0.96	0.1

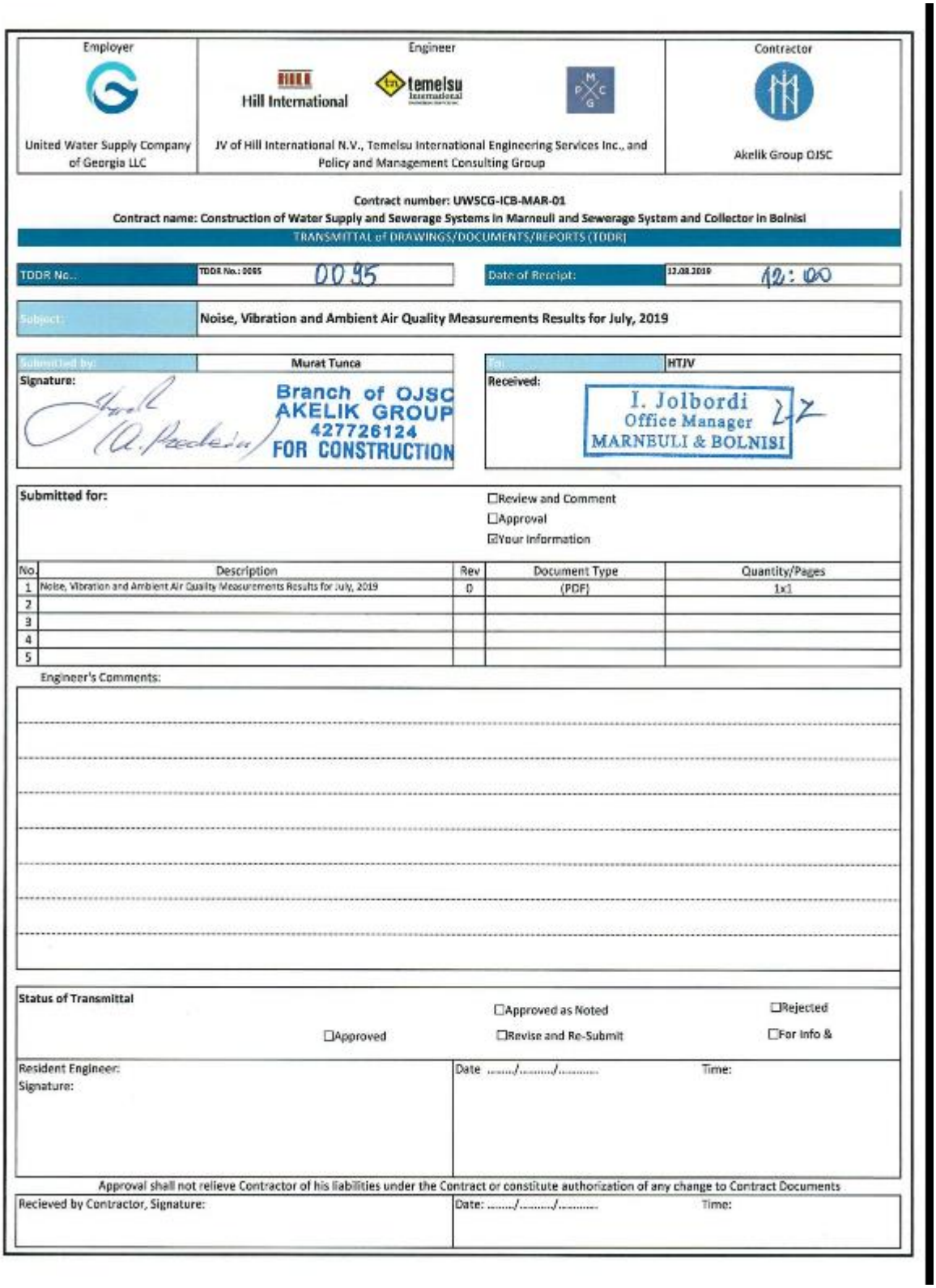
3	ჭიათურა, ლეჭუმნის რეზერვუარი Chiatura, Leguban, Reservoir	38T0357841 4684386	0.025	<0.01	0.27	<0.1
4	ჭიათურა, ჭავჭავაძის 18 Chiatura, Chavchavadze 18	38T0358296 4682951	0.059	<0.01	2,37	<0.1

გაზომვის დროს გამოყენებულია ხელსაქმოები/During measurement tools used:
ხმაური/Noise - Mini Sound Level Meter N05CC;
ვიბრაცია/Vibration- Smart Sensor ® AR63B Vibration Meter:
დამტვერიანობა/ Dust- Portable Dust Deteqtor model LB-HD08
და Gasella Mikro Dust Pro (თვითკალიბრაცია ნულოვანი და ოპტიკური ფილტრით./Self-calibration zero and optical filter.). აზოტის დიოქსიდის და ნახშირბადის მონოოქსიდის - nitrogen dioxide and carbon monoxide - Эшап CO/NO₂
ჯამური ნახშირწყალბადების - total hydrocarbon MiniRae 7600;
გოგირდის დიოქსიდის - sulfur dioxide – WASP-XM-E-SO2.

2001 წლის 16 აგვისტოს, საქართველოს შრომის, ჯანმრთელობისა და სოციალური დაცვის მინისტრის ბრძანება №297/ნ, გარემოს ხარისხობრივი მდგომარეობის ნორმების დამტკიცების შესახებ: / August 16, 2001, the Ministry of Labor, Health and Social Affairs of Georgia №297 / N, approval environmental quality of the norms:
დამტვერიანობის ნორმა შეადგენს 0.5 მგ/მ³; / Dust norm is 0.5 mg / m3;
აზოტის დიოქსიდის ნორმა შეადგენს 0.2 მგ/მ³; / nitrogen dioxide norm is 0.2 mg / m3;
გოგირდის დიოქსიდის ნორმა შეადგენს 0.5 მგ/მ³; / sulfur dioxide norm is 0.5 mg / m3;
ნახშირბადის მონოოქსიდის ნორმა შეადგენს .5 მგ/მ³; / carbon monoxide norm is 5 mg / m3;
ჯამური ნახშირწყალბადების ნორმა შეადგენს 1 მგ/მ³;/total hydrocarbons norm is 1 mg /m3;
ვიბროსიჩქარის ნორმა შეადგენს 112 დბ; / Vibro-speed norm is 112 db;
ვიბროაჩქარების ნორმა სპეციალური დამცავი სამუალებების გამოყენების გარეშე - 126 დბ./Vibro acceleration norm special protective outlets without using - 126 db.

დირექტორი:

Measurement Data – MAR-01



Employer	Engineer	Contractor
United Water Supply Company of Georgia LLC	JV of Hill International N.V., Temelsu International Engineering Services Inc., and Policy and Management Consulting Group	Akelik Group OJSC

Contract number: UWSCG-ICB-MAR-01

Contract name: Construction of Water Supply and Sewerage Systems in Marneuli and Sewerage System and Collector in Bolnisi

TRANSMITTAL of DRAWINGS/DOCUMENTS/REPORTS (TDDR)

TDDR No.:	TDDR No.: 0085 0095	Date of Receipt:	12.08.2019 12:00

Subject: Noise, Vibration and Ambient Air Quality Measurements Results for July, 2019

Submitted by:	Murat Tunca	To:	HTJV

Signature: Branch of OJSC AKELIK GROUP 427726124 FOR CONSTRUCTION

Received: I. Jolbordi Office Manager MARNEULI & BOLNISI

Submitted for:

- ☐ Review and Comment
- ☐ Approval
- ☑ Your Information

No.	Description	Rev	Document Type	Quantity/Pages
1	Noise, Vibration and Ambient Air Quality Measurements Results for July, 2019	0	(PDF)	1x1
2				
3				
4				
5				

Engineer's Comments:

Status of Transmittal

☐ Approved ☐ Approved as Noted ☐ Revise and Re-Submit ☐ Rejected ☐ For Info &

Resident Engineer: Signature: Date ...../...../..... Time:

Approval shall not relieve Contractor of his liabilities under the Contract or constitute authorization of any change to Contract Documents

Recieved by Contractor, Signature: Date: ...../...../..... Time:

Noise, vibration and ambient air quality measurement results

	Location	GPS coordinates WGS 84	Measurement results				
			Dust (PM), mg/m^3		Noise, Db		Vibration, mm/s^2
			Result	Permissible	Result	Permissible	
1	Marneuli, Jandari reservoir	N4594928 E482960	0.058	0.15-average; 0.5-max	54	55	0
2	Marneuli, Construction camp	N4594089 E485290	0.062		49	85	0
3	Qolagiri headwork, 20 meters from existing pump station building (constructing pump station area)	N4588135 E476313	0.049		63	85	0
4	Marneuli, Tsereteli str.	N4588720 E484536	0.074		54	55	0
5	Marneuli, Tsereteli str.	N4587164 E485205	0.081		53	55	0

Measurement performed by /P. Chankotadze/

26.07.19წ.

Noise, vibration and ambient air quality measurement results

	Location	GPS coordinates WGS 84	Measurement results				
			Dust (PM), mg/m³		Noise, Db		Vibration, mm/s²
			Result	Permissible	Result	Permissible	
1	Marneuli, Jandari reservoir (3m from nearest house) Power generator was turned on within 25m from the house*	N4594930 E482888	0.036	0.15- average; 0.5–max	57.4	55	0
2	Marneuli, Construction camp	N4594096 E485275	0.048		47	85	0
3	Qolagiri headwork, 20 meters from existing pump station building (constructing pump station area)	N4588169 E476315	0.039		62	85	0
4	79 Rustaveli street, Bolnisi		0.041		53	55	0

*Recommendation: install additional muffler on generator

Measurement performed by /P. Chankotadze/

25.12.19წ.

ANNEX B: PHOTOS OF SITES

CHI-01 Project

CAMP site

First Aid Toolkits

Asphalt Reinstatement in Main Transmission Line

Chamber Construction

Water meter Instolation

Chiatura Water Supply Network

Photos of MAR-01 project

MAR-01 Network

Construction CAMP

ANNEX C: NON-COMPLIANCE NOTICES

Non-compliance Note (MAR-01), 13 September 2019

Non-Compliance Notice

Project: USIIP/T6	**Non-compliance Notice** **Marneuli**
Contract: MAR-01	
Contractor: Akelik	
Superviser: HILL	
Reference: **Marnuli – Jandari Reservoir, Networks**	

This notice is to advice you, the prime Contractor, on the referenced Contract, of the following notice on environmental measures to be implemented **urgently.**

NON-COMPLIANCE IN MARNEULI

Jandari Reservoir and Networks

- **Construction site should be properly fenced from all sides and trench side barriers around of deep open excavation should be installed from all sides to avoid accidents of local population and construction workers;**
- **Soil (surplus/accumulated soil) for backfilling purposes should be managed/stored properly on the territory primarily agreed with the Municipality;**
- **Diesel generators and containers with fuel/lubricant as well as generator should be managed properly (stored at the proper organized place with concrete floor and roofing) to avoid leakage and ground contamination;**
- **Trench construction should be taken up in small segments, so that work (excavation, pipe laying and refilling) in each segment is completed in a day, no tranches shall be kept open in the night after work hours**
- **Ensure proper compaction of refilled soil, there should not be any loose soil particles on the top; the material should be refilled in layers and compacted properly layers by layers**

Photos of Jandari Reservoir



Photos of refiiling of treches and diesel generator on site



Photos of Network



Monitoring Date: 13 September, 2019

Monitoring was conducted by Maka Goderdzishvili, Head of Environmental Protection and Permits Department of UWSCG and Kate Chomakhidze, Environmental Consultant of USIIP/ADB

Deadline for improvement of situation, with improved photos of sites, within one week period

Non-Compliance Note – HILL, 18 October 2019

Hill International

JV of Hill International N.V. &Temelsu International Engineering Service Inc.
& Sub Consultant Policy and Management Consulting Group (PMCG)

temelsu international

Urban Services Improvement Investment Program, Tranche 6

Ref.: CWSMB-Out-2174-0191-2019-10-18 Date: 18th of October, 2019

AKELIK GROUP OJSC
Tbilisi Business Centre, 5rh Floor
11 Apakidze Str., 0171 Tbilisi, Georgia

Attention: Mr. Andrii Predein, Contractor's Representative

United Water Supply Company of Georgia (UWSCG)
Urban Services Improvement Investment Program, Tranche 6
Contract #: P43405-ICB-MAR-01: Construction Of Water Supply and Sewerage Systems in Marneuli and Sewerage System and Collector in Bolnisi

Re: Protection of the Environment

Dear Sir,

Your attention is invited to General Conditions of Contract Clause 4.18 that, the contractor shall take all reasonable steps to protect the environment & ensure that emissions, surface discharges and effluent from contractor's activities shall not exceed the values stated in the specifications or prescribed by applicable laws. The Particular Conditions of Contract, Part B Specific Provisions, clause 4.18 stipulate that the contractor shall carry out all the monitoring & mitigation measures set forth in the IEE and EMP & shall allocate budget for compliance with these measures, requirements and actions. In IEE table 27, it is stipulated that the contractor will carry out Monthly Parametric Measurements (at least at 3 sites) Noise, vibration and dust on the regular bases as well as during the peak operation of Construction Equipment and Machinery. However, we have not received any reports for the month of September 2019. You are requested to conduct monitoring of environmental data and intimate us. Please note that the budget allocated in IEE for this activity will be deducted from the IPC if it is not done.

You are also requested to strictly comply Environmental Management Plan which is essential part of contract.

Your attention is also drawn to clause 6.7 of General Conditions of Contract that the contractor shall at all times take all reasonable precautions to maintain the health and safety of the contractors personnel, the contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance services are available at all times at the site. You are requested to comply the contract provisions about health & safety & intimate the measures being adopted in this regard.

Yours faithfully,

Narendra Singh Shekhawat
Engineer's Representative /Chief Resident Engineer

Hill International-Temelsu J.V.

ecc: Mr. Giorgi Archaia, Head of Projects management Department, UWSCG

Address: 24G Al. Kazbegi Ave., Apt. #73, Tbilisi, Georgia, Zip Code: 0177; Tel: (+995 32) 2 477 409

Received 18.10.19

ANNEX D: HEALTH AND SAFETY REPORTS

Near Misses Report

"Akelik-Group"'s Report of Injury Form

Instructions: Akelik will use this form to report all work related injuries, illnesses, or "near miss" events (which could have caused an injury or illness) – *no matter how minor*. This helps us to identify and correct hazards before they cause serious injuries. This form shall be completed by employees as soon as possible and given to a supervisor for further action.

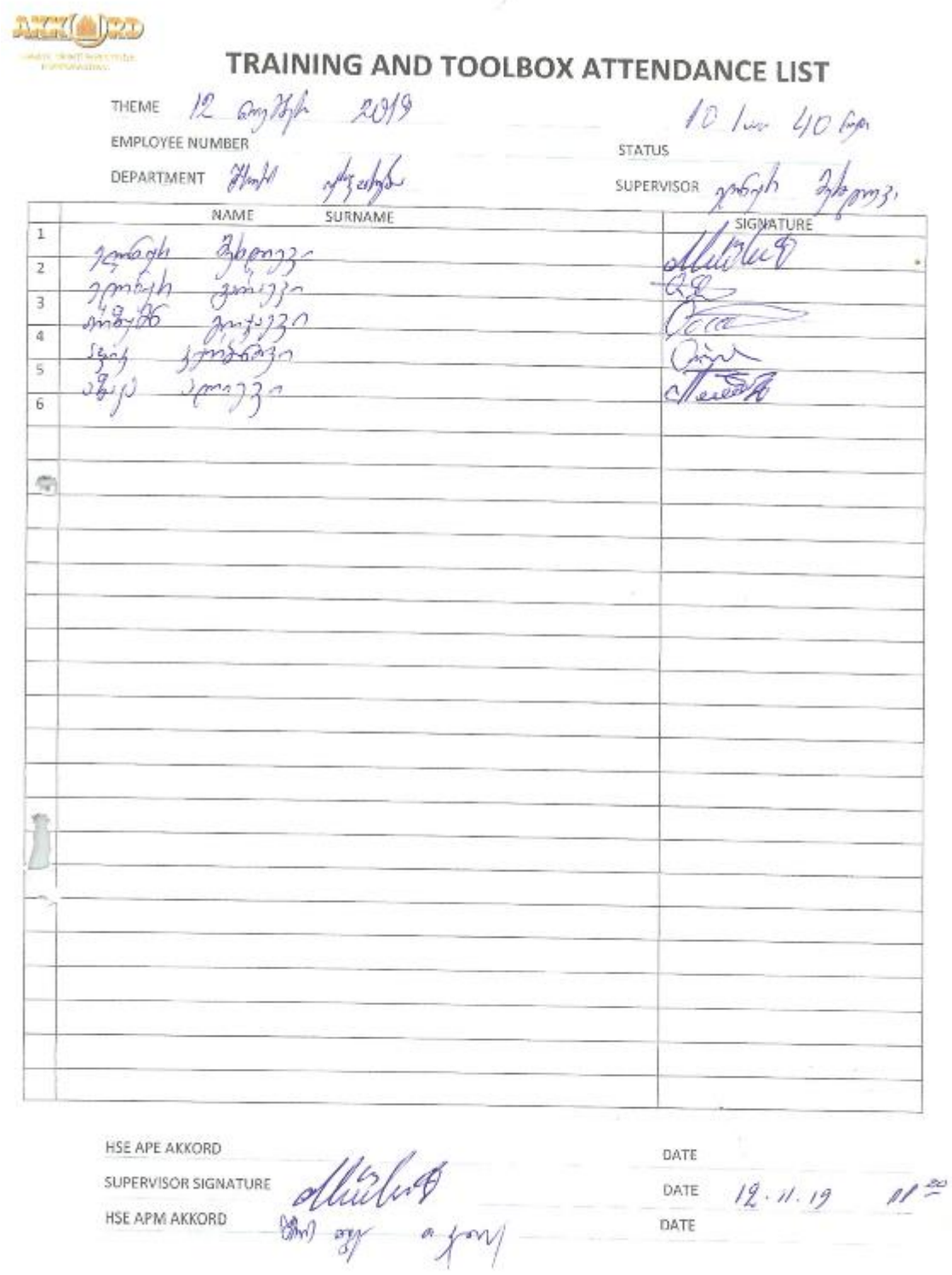
I am reporting a work related: ☐ Injury ☐ Illness ☑ Near miss	
Your Name: Vakhtang Barchaladze	
Job title: Construction Manager	
Supervisor:	
Have you told your supervisor about this injury/near miss? ☑ Yes ☐ No	
Date of injury/near miss: 10/08/2019	Time of injury/near miss: 16:45
Names of witnesses (if any): Takhmur Abasov	
Where, exactly, did it happen? Jandari Reservoir	
What were you doing at the time? Supervising	
Describe step by step what led up to the injury/near miss, (continue on the back if necessary): A workman dropped a hammer off a scaffold, which fell 4m to the ground landing only a few meters away from another operative	
What could have been done to prevent this injury/near miss? The scaffold was inspected and found to have missing toeboards where the hammer slipped through. This was immediately rectified preventing other materials falling and causing accidents in future.	
What parts of your body were injured? If a near miss, how could you have been hurt? Head	
Did you see a doctor about this injury/illness? ☐ Yes ☑ No	
If yes, whom did you see?	Doctor's phone number:
Date: 10/08/2019	Time: 16:45
Has this part of your body been injured before? ☐ Yes ☑ No	
If yes, when?	Supervisor:
Your signature:	Date: 12/08/2019

"Akelik-Group"'s Report of Injury Form

Instructions: Akelik will use this form to report all work related injuries, illnesses, or "near miss" events (which could have caused an injury or illness) – *no matter how minor*. This helps us to identify and correct hazards before they cause serious injuries. This form shall be completed by employees as soon as possible and given to a supervisor for further action.

I am reporting a work related: ❑ Injury ❑ Illness ☑ Near miss	
Your Name: Vakhtang Burchuladze	
Job title: Constultrian / Deputy of PM	
Supervisor: Beso Gabidzashvili	
Have you told your supervisor about this injury/near miss? ☑ Yes ❑ No	
Date of injury/near miss: 05/01/2020	Time of injury/near miss: 11:00
Names of witnesses (if any): Zura Sikharulidze	
Where, exactly, did it happen? Bolnisi Network	
What were you doing at the time? Supervising	
Describe step by step what led up to the injury/near miss. (continue on the back if necessary): The excavator operator stated that the worker enter and exit the unprotected trench that morning.	
What could have been done to prevent this injury/near miss? The shuttering of the trench was executed for protection of the trench from collapse.	
What parts of your body were injured? If a near miss, how could you have been hurt?	
Did you see a doctor about this injury/illness? ❑ Yes ☑ No	
If yes, whom did you see?	Doctor's phone number:
Date: 05/01/2020	Time: 13:00
Has this part of your body been injured before? ❑ Yes ❑ No	
If yes, when?	Supervisor:
Your signature:	Date: 06/01/2020

ANNEX E: Training and Toolbox Attendance List



AKKORD

TRAINING AND TOOLBOX ATTENDANCE LIST

THEME 12 ... 2019 10 ... 40 ...

EMPLOYEE NUMBER STATUS

DEPARTMENT ... SUPERVISOR ...

	NAME	SURNAME	SIGNATURE
1	...	...	
2	...	...	
3	...	...	
4	...	...	
5	...	...	
6	...	...	

HSE APE AKKORD DATE

SUPERVISOR SIGNATURE DATE 12.11.19 11:20

HSE APM AKKORD DATE

2.07.19

№	Soyadı Adı Atasının adı	İmza	№	Soyadı Adı Atasının adı	İmza
1	Nərimanov Toğrul Xanəhməd		1	Nərimanov Toğrul Xanəhməd	
2	Ulumbelaşvili Tamazi Qiorqi		2	Ulumbelaşvili Tamazi Qiorqi	
3	Kalmaxelidze Tedore Tedore		3	Kalmaxelidze Tedore Tedore	
4	Mehdiyev Elnur Balaxan		4	Mehdiyev Elnur Balaxan	
5	Məmmədov Elxan Mikayıl		5	Məmmədov Elxan Mikayıl	
6	Ağalarov Rauf Rafiq		6	Ağalarov Rauf Rafiq	
7	Beriyaşvili Simon Levan		7	Beriyaşvili Simon Levan	
8	Novruzov Teymuraz		8	Novruzov Teymuraz	
9	Miralıyev İlham Soltanəli oğlu		9	Miralıyev İlham Soltanəli oğlu	
10	Nurəliyev Əmnağı Qaybalı oğlu		10	Nurəliyev Əmnağı Qaybalı oğlu	
11	Abramişvili Nuqzar Vaja		11	Abramişvili Nuqzar Vaja	
12	Əliyev Ceyhun Yaşar		12	Əliyev Ceyhun Yaşar	
13	Məmmədov Fəxrəddin		13	Məmmədov Fəxrəddin	
14	Ağayev Mircəmil Mirxəlil		14	Ağayev Mircəmil Mirxəlil	
15	Səmədov Kamil Bakir		15	Səmədov Kamil Bakir	
16	Babayev Elşən Aydın		16	Babayev Elşən Aydın	
17	Hüseynov Bayram Musa		17	Hüseynov Bayram Musa	
18	Hüseynov Rafiq Namaz oğlu		18	Hüseynov Rafiq Namaz oğlu	
19	Yusubov Adış Əhmədağa oğlu		19	Yusubov Adış Əhmədağa oğlu	
20	Məhərrəmov Ramiz Balaxan		20	Məhərrəmov Ramiz Balaxan	
21	Ağazadə Rusif		21	Ağazadə Rusif	
22	Əkbərzadə Elmədin Əli		22	Əkbərzadə Elmədin Əli	
23	Qasımov Mirmüşviq Fərəc		23	Qasımov Mirmüşviq Fərəc	
24	Səmədov Səməd İmran		24	Səmədov Səməd İmran	
25	Beriyaşvili Qiorqi Simon		25	Beriyaşvili Qiorqi Simon	
26	Kavelaşvili Amirani Qiquşa		26	Kavelaşvili Amirani Qiquşa	
27	Kavtaradze Manuka Vladimir		27	Kavtaradze Manuka Vladimir	
28	Tsartsidze Valeri Tengiz		28	Tsartsidze Valeri Tengiz	
29	Laşxi Tengiz Qulakdion oğlu		29	Laşxi Tengiz Qulakdion oğlu	
30	Modebadze Ambrosi Saçiuru oğlu		30	Modebadze Ambrosi Saçiuru oğlu	
31	Amkoladze Tariel Levan oğlu		31	Amkoladze Tariel Levan oğlu	
32	Kamuşadze Givi Emzar oğlu		32	Kamuşadze Givi Emzar oğlu	
33	ModebadzeTemuraz İlo		33	Modebadze Temuraz İlo	
34	Çauçidze Zakro Tamaz oğlu		34	Çauçidze Zakro Tamaz oğlu	
35	Çarçidze Ramaz Zakro		35	Çarçidze Ramaz Zakro	
36	Qaraev Elnur Yaşar		36	Qaraev Elnur Yaşar	
37	Nəsibov Rafiq Məşədi		37	Nəsibov Rafiq Məşədi	
38	Yusubov Məhəmməd Cavanşir		38	Yusubov Məhəmməd Cavanşir	
39	Əliev Səqil Rizvan		39	Əliev Səqil Rizvan	
40	Əsgərov Qacax Şəmxalı		40	Əsgərov Qacax Şəmxalı	
41	Namazov İlkin Əmrah		41	Namazov İlkin Əmrah	
42	Həsənov Fikrət Tağı		42	Həsənov Fikrət Tağı	
43	Nağıyev İlyas Elşən		43	Nağıyev İlyas Elşən	
44	Nəibov Akif Veys		44	Nəibov Akif Veys	
45	Nəzərov Eyvaz		45	Nəzərov Eyvaz	
46	Ağalov Əlqan		46	Ağalov Əlqan	
47	Yusubov Elçin		47	Yusubov Elçin	
48	Çovdarov Vaqif		48	Çovdarov Vaqif	

Məmmədov Cabir

Yusubov Məhəmməd

İlkin Nəsibov