

# Environmental Monitoring Report

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Semestral Report  
March 2017

## GEO: Urban Services Improvement Investment Program – Project 1

**Prepared by United Water Supply Company of Georgia, LLC, Government of Georgia for the Asian Development Bank.**

This environmental monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

## BI-ANNUAL ENVIRONMENTAL MONITORING REPORT

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*Project Number: 43405-023*  
*July-December 2016*  
*Loan Number 2749-GEO (SF)*

### **GEORGIA: URBAN SERVICES IMPROVEMENT INVESTMENT PROGRAM (TRANCHE 1) (FINANCED BY THE ASIAN DEVELOPMENT BANK)**

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Donors Relations

December 2016

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## ABBREVIATIONS

<b>ADB</b>	Asian Development Bank
<b>DC</b>	Design Consultant
<b>UREP</b>	Unit of Resettlement and Environmental Protection
<b>EA</b>	Executing Agency
<b>EARF</b>	Environmental Assessment and Review Framework
<b>EHS</b>	Environmental Health & Safety
<b>EIA</b>	Environmental Impact Assessment
<b>EIP</b>	Environmental Impact Permit
<b>EMP/ SSEMP</b>	Environmental Management Plan/ Site-Specific Environmental Management Plan
<b>ES/ SES</b>	Environmental Specialist/ Senior Environmental Specialist
<b>GoG</b>	Government of Georgia
<b>GRC</b>	Grievance Redress Committee
<b>GRM</b>	Grievance Redress Mechanism
<b>USIIP</b>	Urban Sector Improvement Investment Program
<b>IA</b>	Implementing Agency
<b>IEE</b>	Initial Environmental Examination
<b>MFF</b>	Multi-tranche Financing Facility
<b>MoENRP</b>	Ministry of Environment and Natural Resources Protection
<b>MoRDI</b>	Ministry of Regional Development & Infrastructure
<b>NEA</b>	National Environmental Agency
<b>SC</b>	Supervision Consultant
<b>UWSCG</b>	United Water Supply Company of Georgia
<b>WSS</b>	Water Supply & Sewerage

## TABLE OF CONTENTS

<b>PART I – INTRODUCTION</b> .....	6
1.1 Construction activities and project progress during the previous 6 months .....	6
A. General information about the program/SUBPROJECTS .....	6
B. Construction activities and project progress during the previous 6 months .....	8
1.2 Changes in Project Organization and Environmental Management Team .....	9
<b>PART II - Environmental Monitoring</b> .....	13
C. Monitoring Measurement Data .....	17
D. Removal of vegetation/trees for construction .....	Error! Bookmark not defined.
<b>PART III - Environmental management</b> .....	18
3.1 The Environmental Management System, site-specific environmental management plan (SSEMP) and work plans .....	18
3.2 Site Inspections and Audits .....	19
3.3 Non-Compliance Notices .....	20
3.4 Corrective Action Plans .....	20
3.5 Actions taken to reflect the findings of ADB mission carried out on 5-8 May 2015 and on 7-9 October 2015: .....	23
3.6 Consultations and Complaints .....	25
<b>PART IV – CONCLUSIONS AND ACTION PLAN FOR THE NEXT PERIOD</b> .....	27
4.1 Conclusions and recommendations .....	27
4.2 Action Plan for the next period .....	30

### ANNEX A: MONITORING MEASUREMENTS DATA

### ANNEX B: PROJECT PHOTOS

### ANNEX C: NON-COMPLIANCE NOTICES

### ANNEX D: IMPLEMENTATION REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) /INITIAL ENVIRONMENTAL EXAMINATION (IEE) MITIGATION REQUIREMENTS

### ANNEX E: GRIEVANCE REDRESS MECHANISM

### ANNEX F: WEEKLY MONITORING REPORT FROMS

### ANNEX H: LETTER OF PERMISSION ISSUED BY THE CITY HALL OF TBILISI

### ANNEX G: POST CONSTRUCTION ENVIRONMENTAL AUDIT

### LIST OF TABLES:

<b>Table 1:</b>	Project Progress during the Previous 6 Months
<b>Table 2:</b>	List of contracts under USIIP, T1
<b>Table 3:</b>	Parametric Measurement Guidelines
<b>Table 4:</b>	Noise Level Guidelines
<b>Table 5:</b>	Monitoring Measurements under Ure-01 Project
<b>Table 6:</b>	Status of Site-Specific Environmental Management Plans
<b>Table 7:</b>	The Schedule of Conducted Audits and Monitoring during the Reporting Period
<b>Table 8:</b>	Actions taken for Implementation of Mitigation Measures under Ure-01 Projects
<b>Table 9:</b>	Status of Findings of ADB Mission Carried Out on 29-30 September 2016
<b>Table 10:</b>	Recommendations to Address Environmental Issues
<b>Table 11:</b>	Schedule of mitigation measures to be implemented by the contractor Under Reg-01 project
<b>Table 12:</b>	The Specific Plan of Environmental Measurement under Ure-01 Project
<b>Table 13:</b>	The Specific Plan for Environmental Measurement under Reg-02 Project

### LIST OF FIGURES:

<b>Figure 1:</b>	Structure Diagram of the Environmental Management Unit of UWSCG
<b>Figure 2:</b>	Structure Diagram of the Agencies Involved in Investment Program Implementation

## PART I – INTRODUCTION

### 1.1 Construction activities and project progress during the previous 6 months

#### A. General information about the program/SUBPROJECTS

1. The present Bi-annual Environmental Monitoring Report covers July-December 2016 time period.
2. 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.
3. 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.
4. The Investment Program will improve the health of residents in the urban centers of Mestia, Anaklia, Kutaisi, Poti, Ureki, Zugdidi and Marneuli. The outcome of the Investment Program is improved WSS services in these urban centers.
5. Tranche 1 of the Investment Program includes:
  - Construction of Mestia Headworks (MES-01)
  - Improvement of Water Supply Infrastructure in Anaklia, Kutaisi and Poti (REG-01)
  - Construction of Mestia Water Treatment Plant and Reservoirs (REG-02)
  - UWSCG Office Building
  - Construction of the Water Supply Network in Ureki (Ure-01).

#### **The following projects are financed under Tranche 1:**

6. **Mestia Water Supply Headworks (Contract MES-01).** The project comprises of the construction of a Tyrolean Weir as intake structure on Mestia Chala River for the capture of raw water. The discharge is estimated at minimum 1,000 liters/second in dry seasons. The location has been chosen for its altitude and the possibility to supply the water treatment plant, the adjoining reservoir and from there the largest part of the distribution network, by gravity. Apart from the intake, the scope of work comprises 10.75 km transmission lines to the site of Water Treatment Plant and a reservoir and the connection of this location to the distribution network.
7. The contract MES-01 was signed on 10 October 2011 with Joint Venture of Dagi LTD – Georgia and Enguri 2006 LTD – Georgia (which changed its corporate name to Enguri - New Construction LTD on 11 April 2013), and the scheduled Time for Completion was on 31 October 2013. The contract has completed the works on the

reservoir, the intake, and the transmission pipeline, including its testing and the installation of the last section in the LARP Corridor. LARP compliance report was issued by EPTISA in July 2014. Taking over of the facilities took place on 20 July 2014.

8. **Kutaisi, Poti & Anaklia water supply infrastructures (contract Reg-01).** The scope of works includes improvement of water supply infrastructure in Anaklia, Kutaisi and Poti, in particular, reservoirs and pumping stations, transmission lines and distribution lines of water supply systems as well as a water treatment plant in Poti. The project envisages installation of water pipelines on 96 km. Concrete water reservoirs will be built on 5 places with total capacity of 35,000m<sup>3</sup>. The project also covers construction of 4 pumping stations (with total capacity of 4,516 m<sup>3</sup>/h) as well as construction of water treatment facility.
9. United Water Supply Company of Georgia under the Ministry of Regional Development and Infrastructure of Georgia signed a contract (#UWSCG/ICB/CW-2013-REG-01) with Spanish Cobra Instalaciones y Servicios. The Contract was made effective 19 September 2013.
10. Construction activities were completed on 16 May 2016 and Post Construction Environmental Audit was conducted on 21-22 December 2016 by independent consultant. Final Audit Report is attached in Annex G.
11. All non-compliances revealed during the post-construction Audit and corrective actions with deadlines to improve the situation and to be implemented by Contractor are presented in Table 11 of this report.
12. Tbilisi Office Building. Detailed design for construction of a new head office of UWSCG was prepared and funded by GoG. IEE for office building completed and was submitted to ADB. In 02.08.2014 the baseline survey and biodiversity study of the project area was conducted. Public Hearing meeting was held on 2 July 2014.
13. The new construction area is located in the suburb area of the city in close proximity with Tbilisi State University. Number of door-to-door public consultations have been carried out with the local population. The specially developed invitation letters prior to the Public Hearing, signed by the head of UWSCG was distributed among the local population and stakeholders.
14. **Construction of Office Building of UWSCG:** Due to untimely issuing of permit for cutting of 9 Eldari pine trees by Ecology and Greenery Department of Tbilisi City Hall, the construction works for head office building was suspended. Finally, permission was granted and fees for tree removal was estimated by the Municipality in the amount of GEL 53,000.00. Letter of permission issued by Tbilisi City Hall is attached to this report (Annex H).
15. United Water Supply Company of Georgia under the Ministry of Regional Development and Infrastructure of Georgia signed a contract (#CW/ICB/Office-01) with Georgian Construction Company DAGI Ltd on 1 December 2015. Date of commencement of civil works is December 29, 2015. The original completion date of the works is 21.06.2017
16. **MESTIA Water Supply Facilities (Contract REG-02).** The scope of works includes: a new water treatment plant (WTP); the rehabilitation of Tsrniashi spring catchment; a

new reservoir at Lanchvali (1,000 m<sup>3</sup>); a new reservoir at Shgedi (1,000 m<sup>3</sup>); transmission pipes of approximately 9,200 meters.

17. The Contractor has to design and build a WTP with a treated water standard that complies with the European standard for the drinking water quality and is defined in the Council Directive 98/83/EC. The new WTP will have a design capacity of 80 l/s to serve the projected population in 2040. Some of the components (hydrocyclone, micro-/ultrafiltration, drinking, process and backwash water pumps) to be constructed under this contract will be for half of the design population in 2040 at this stage. Contract was signed with JV Ludwig Pfeiffer Hock und Tiefbau GmbH & Co. KG and ProtecnoSrl on 22 September 2014 and Notice-to-Proceed given on 08 December 2014.
18. **Construction of Water Supply and Wastewater Network in Ureki/Phase I (URE-01).** The project is simultaneously financed from Tranches I, II and III. The planned works under Tranche I included construction of Res-01 and Res-02 (2 x 3,000 m<sup>3</sup> and 1 x 1,200 m<sup>3</sup>) and one water supply pumping station (78m<sup>3</sup>/h and 676 m<sup>3</sup>/h), but currently location of Res-01 is changed. Final design and location is under consideration and will be finalized by the mid of January.
19. The Contract is signed with JV of Peri Ltd (Georgia) Leading Partner and Slon LLC (Azerbaijan) on October 28, 2014. Commencement date was November 24, 2014. Completion date is scheduled on November 22, 2017. The project is foreseen to serve 35,000 tourists and 5,400 local inhabitants by year 2040.

## B. Construction activities and project progress during the previous 6 months

### Construction Activities during previous 6 months under URE-01 project (July-December 2016)

**Table 1: Project Progress during the Previous 6 Months**

#### URE-01

Site URE-01	Water Mains Installation
Works undertaken during July-December 2016	13.775 km of PE 100 pipes OD 710, SDR 11 installed – 60.69%
Site	Water network
Works undertaken during July-December 2016	6.845 km of HDPE pipes DN 25-560 – 13.55%
Site	Sewerage network
Works undertaken during July-December 2016	5.296 km of PE 100 and corrugated pipes OD 110-500 mm, SDR 11 installed – 7.53%
Site	Construction of Reservoir #1
Works undertaken during July-December 2016	Excavation Works – 20%



## REG-02

Site WTP-Mestia	Water mains installation
Site	Pipelines
Works undertaken during July-December 2016	Earthworks - 37% Pipes - 47%
Site	Lanchvali Reservoir
Works undertaken during July-December 2016	Civil Works – 77%
Site	WTP-Mestia
Works undertaken during July-December 2016	Civil Works - 42%
Site	Shgedi Reservoir
Works undertaken during July-December 2016	Civil Works – 54%

## Tbilisi Head Office

Site Tbilisi Head Office	Water mains installation
Site	Excavation works
Works undertaken during July-December 2016	Excavation works – 90%

## 1.2 Changes in Project Organization and Environmental Management Team

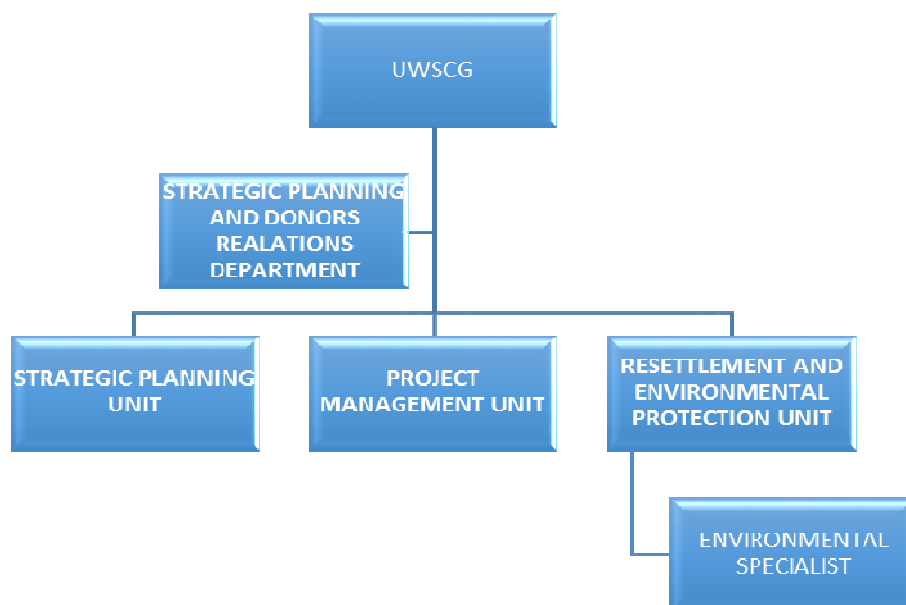
### Agencies Involved in Investment Program Implementation

20. 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.
21. 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. An Investment Program Management Office (IPMO) which is the Strategic Planning and Donors Relations Department (the former name of the Donors Relations Department was changed in July 2016) is responsible for the implementation of all Investment Program related functions. Resettlement and Environmental Protection Unit (UREP) is part of this Department. The IPMO coordinates construction of subprojects under USIIP, and ensures consistency of approach and performance.
22. In December 2016 the name of IPMO was changed and became an International Procurement and Donors Relations Department. A new Department of Environmental

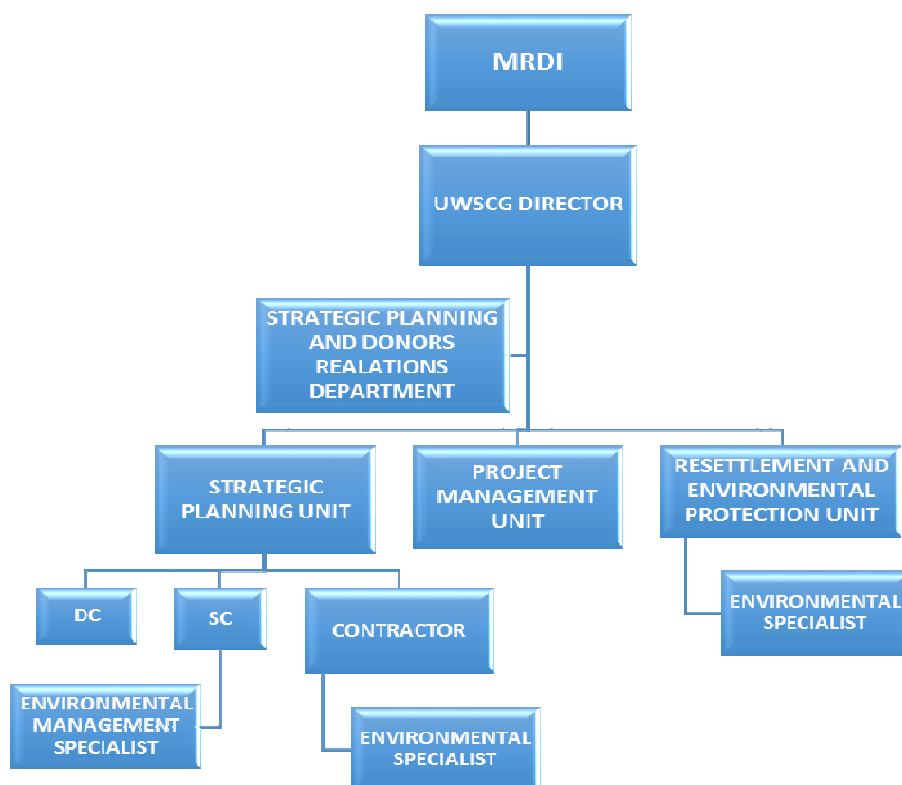
Protection, Resettlement and Permit (DEPRP) was established instead of UREP as well. DEPRP will include Unit of Construction Permission and will consist of five staff members. The new structural changes will enter into force from January 2017.

23. UWSCG as responsible IA for the project recruited a Supervision Consultant (SC) - Eptisa. 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. 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.
24. All mitigation measures during construction have to be implemented by the contractor and these are monitored by the supervision consultant (SC). To ensure the smooth implementation of EMPs and SEMP of subprojects, an Environmental Management Specialist (EMS) is employed by the SC/Eptisa. SC/EMS conducts routine observations and surveys, prepares quarterly environmental reports and submits these to UWSCG.
25. The Contractor has the following obligations:
  - to prepare SSEMPs;
  - to employ Environmental Consultant responsible for developing and implementing the construction phase SSEMPs and for providing the corresponding information to UWSCG and SC;
  - to develop Solid Waste Disposal Plan and agreed the MoENRP and Local Government
26. DC is responsible for developing and incorporation of mitigation measures in design and construction.
27. The environmental specialist (ES) is hired by UWSCG under the USIIP to assist and advise the Resettlement and Environmental Protection Unit (UREP) in USIIP program implementation in compliance with the ADB Safeguard Policy Statement 2009 and National Legislation, and oversee the work of DCs and SCs in safeguards compliance. ES supports UREP in EARF implementation, in particular, reviewing IEE/EIA Reports and overseeing implementation of EMP/SSEMPs and in training and capacity-building activities. The ES prepares bi-annual and annual environmental monitoring reports and submits to ADB.
28. UREP is responsible for the implementation of mitigation and monitoring measures during construction and operation of subprojects under USIIP. Currently UREP is staffed with a Head of Division and one specialists, who is responsible for both resettlement and environmental issues.
29. 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



### **1.3 Relationships with Contractors, Owner, Lender, etc**

- 30.** Relationships with Contractors, Owner and Lender are considered as normal working relationships. At the working level, coordination of environmental issues has been satisfactory, the government agencies, UWSCG, consultants and contractors are in frequent communication and consultation.
- 31.** Ministry of Regional Development and Infrastructure (MoRDI) is the Executing Agency (EA) responsible for oversee progress and provide guidance on the Investment Program implementation; convene regular meetings in consultation with the SC and UWSCG; ensure compliance with Investment Program covenants.
- 32.** Oversight of the USIIP with regards to environmental management is the responsibility of the environmental safeguards team, in particular UWSCG/UREP and the Environmental Specialist of USIIP.
- 33.** The team has constant communication with the Supervision Consultant, Contractor, reviews/ comments all environmental reports submitted by DC, SC and contractors.
- 34.** In fact the SSEMPs has been approved by UWSCG/UREP after the numerous discussions with the contractor until the specific situations of the site as well as mitigation measures under the site specific management plans are reflected.
- 35.** SC is responsible for environmental capacity building, monitoring of implementation of SEMP and for developing quarterly reports. The Contractor has a full time Environmental Specialist who carries out day to day monitoring and submits monthly progress reports.
- 36.** ADB oversees project sites regularly and gives clear instructions for the project sites improvements with regard to environmental safeguards.
- 37.** To resolve the observed environmental safeguard issues, the regular Environmental Meetings are organized with participation of UWSCG/IPMO/UREP, Eptisa and Contractors. During the meetings environmental issues and implementation of the mitigation measures are discussed.
- 38.** A Grievance Redress Committee has been established within REG-01 in Kutaisi, Poti and Anaklia, to date all grievances have been dealt to the satisfaction of complainants.
- 39.** Below are the list of subcontractors of PERI Ltd (Ure-01 project) for Disposal of Municipal Waste and extraction of minerals (gravel, ballast, etc)
  - Ureki Municipality - contract was signed for disposal of Municipal Waste from Ureki WWTP site to the Ureki landfill
  - License issued to Ltd Peri by the MoENRP for mineral extraction (gravel, ballast) on the basis of the purchase agreement signed between the Ltd “Peri” and Ltd “Anagi”.
- 40.** Below are the list of subcontractors of “Ludwig Pfeiffer Hech und Tiefbau GmbH and Co” under the Reg-02 project
  - “Solid Waste Management Company of Georgia” – contract was signed for disposal of Solid Waste from Mestia Construction sites

41. Monthly site meetings have taken place with all Contractors during the reporting period, with a focus on progress and technical problems as well as environmental safeguard issues.
42. Under the Ure-01 and Reg-02 projects, contractors have signed agreement with the National Environmental Agency for the monitoring of measurements (dust, CO, NO<sub>2</sub>, SO<sub>2</sub>, noise) at various construction sites.
43. Project organization for the awarded contracts listed above is given in the table 2 below.

**Table 2: List of contracts under USIIP, Tranche 1**

<b>Contract #</b>	<b>Employer</b>	<b>Contractor</b>
<b>Contract No UWSCG/ICB/CW/2011-MES-01</b>	UWSCG	Joint Venture of Dagi LTD - Georgia and Enguri 2006 LTD – Georgia (on April 2013 the name of Enguri 2006 LTD was changed to Enguri - New Construction LTD)
<b>Contract No: UWSCG/ICB/CW-2013-REG-01</b>	UWSCG	Cobra Instalaciones y Servicios SA (from Spain)
<b>Contract No: UWSCG/USSIP/ICB/CW/REG-02</b>	UWSCG	JV of Ludwig Pfeiffer Hoch-und Tiefbau GmbH & Co.KG (Germany) and Protechno Srl (Italy)
<b>Contract No: P43405-ICB-URE-01</b>	UWSCG	JV of Peri Ltd (Georgia) Leading Partner and Slon LLC (Azerbaijan)
<b>Contact No CW/ICB/Office-01</b>	UWSCG	Dagi LTD (Georgia)

## **PART II - ENVIRONMENTAL MONITORING**

44. Individual and joint on-site monitoring activities were conducted by Environmental Monitoring Specialist of SC and Environmental Specialist of UREP under USIIP on a regular basis, during the period July-December, 2016. Monitoring sheets (Mitigation Compliance & Inspection Monitoring Forms submitted by ADB) were filled in on a monthly basis. Also unscheduled monitoring visits were carried out and non-compliance notice has been issued to the contractor as needed. Mitigation measures to reduce major environmental impacts have been instructed to contractors during the monitoring visits.
45. The monitoring activities included:
  - Post Construction Audit of compliance of construction activities under Reg-01 project site (Kldiashvili Pumping Station) to the EMP/SSEMPs requirements;
  - The monitoring of compliance of construction activities under REG-02 project sites to the overall project EMP/SSEMP requirements;
  - The monitoring of compliance of construction activities under the Ure-01 project sites to the EMP/SSEMP requirements
  - The monitoring of compliance of construction activities under the Tbilisi Office Building project sites to the EMP/SSEMP requirements

46. Environmental Monitoring Specialists hired under the URE-01 and Reg-02 projects conducted the day-to-day monitoring of the construction sites, developed the monthly monitoring reports and submitted to Eptisa.
47. Environmental Monitoring Specialist of SC developed quarterly monitoring reports for UWSCG/UREP based on the monthly reports submitted by Contractor, and based on environmental site inspection.
48. ES of UREP performed monitoring of contractor's performance with the approved EMPs and SSEMPs, environmental standards and other environmental commitments of the contractor. ES developed bi-annual and annual environmental monitoring reports and submitted to ADB based on the quarterly reports prepared by SC and monitoring results.
49. The USIIP's Environmental Impact Monitoring and Mitigation is carried out in accordance with the updated EMPs and Site-Specific Environmental Management Plans (SSEMPs) prepared by the Contractors. The construction activities affecting the environment are as follows:
- Excavation works
  - Removal of soil
  - Removal of vegetation
  - Backfilling of trenches
  - Reinstatement activities
50. 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. Locations for the measurements were initially identified in the IEE. Accordingly, the monitoring guidelines were set as shown in the table 3 below. Reg-01, Ure-01, Reg-02 and Tbilisi Head Office is reported in this EMR.

**Table 3: Parametric Measurement Guidelines**

Parameters	Frequency & Location	Remarks
<b>Reg-01</b>		
Noise Kldiashvili Pumping Station in Kutaisi	During the site visits	Ensure that contractor implemented all planned measures to improve the situation
<b>Ure-01</b>		
Air Quality	Air Quality Every 3 months Reservoir #1, Pumping Station, Well Fields, Networks, Transmission Main	Watering site during excavation works to avoid dust spreading  Conduct measurements of Dusts Mg/m <sup>3</sup> ; CO Mg/m <sup>3</sup> ; NO <sub>2</sub> Mg/m <sup>3</sup> ; SO <sub>2</sub> Mg/m <sup>3</sup>

Parameters	Frequency & Location	Remarks
Noise	Noise Every 3 months Reservoir #1, Pumping Station, Well Fields, Networks, Transmission Main	Ensure that all equipment & vehicles used for construction activity are in good condition  Limiting working hours to 8 am – 6 pm
Impact on Flora and Fauna	Monthly during the site monitoring.	Avoid tree cutting In unavoidable cases, plant four trees of same species for each tree that is cut for construction
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.
<b>Tbilisi Head Office</b>		
Impact on Flora and Fauna	During the site inspection and audit	Avoid tree cutting In unavoidable cases, plant four trees of same species for each tree that is cut for construction
Air Quality	Air Quality Every 3	Watering site during excavation works to avoid dust spreading  Conduct measurements of Dusts Mg/m <sup>3</sup> ; CO Mg/m <sup>3</sup> ; NO <sub>2</sub> Mg/m <sup>3</sup> ; SO <sub>2</sub> Mg/m <sup>3</sup>

Parameters	Frequency & Location	Remarks
Noise	Weekly, during the site inspection and audit	Ensure that all equipment & vehicles used for construction activity are in good condition  Limiting working hours to 8 am – 6 pm
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.
<b>Reg-02/Mestia</b>		
Impact on Flora and Fauna	During the site inspection and audit	Avoid tree cutting in unavoidable cases, implement the measures defined by the Georgian regulations
Loss of topsoil due to incorrect stripping and storage	During the site Inspection and audit	Top soil of about 15 cm depth shall be removed and stored separately in appropriate location
Dust generation	During the site inspection and audit	Use tarpaulins to cover loose material that is transported to and from the site by truck  Clean wheels and undercarriage of haul trucks prior to leaving construction site
Noise	During the site inspection and audit	Ensure that all equipment & vehicles used for construction activity are in good condition



Parameters	Frequency & Location	Remarks
		Limiting working hours to 8 am – 6 pm
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.

51. 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.

## B. Monitoring Measurement Data

### KUTAISSI/Kldiashvili Pumping Station - Water Supply Infrastructures (Contract REG-01):

52. Noise measurement carried out by the contractor on Kldiashvili Pumping stations have shown that the noise level exceeds the EMP/SSEMP requirements and National Environmental Standards.
53. Noise impacts should not exceed the levels presented in Table 3, in accordance with Decree No. 297/N “On Approval of Environmental Quality Norms” (August 16, 2001 of the Ministry of Labor, Health and Social Affairs), or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site.

**Table 4: Noise Level Guidelines**

Noise	dB	
Receptor	Daytime 07:00 - 22:00	Nighttime 22:00 - 07:00
Residential; institutional; educational	55	45
Industrial; commercial	70	70

54. The monitoring measurements were carried out by contractor/Peri in various construction sites on November 2016 (See Annex 1). Location and data are included in the table below. The next monitoring measurements will be conducted in February 2017 and results will be reflected in the next January-June 2017 EMRs. According to data received in November 2016 the obtained results did not exceed the National Environmental Standard (Maximum Permissible Level) of Dust, CO, NO<sub>2</sub>, SO<sub>2</sub> and Noise, therefore no additional mitigations are required. All measurement were carried out at day time (14:00 – 17:00pm).

#### Monitoring measurement data:

**Table 5: Monitoring Measurements under Ure-01 Project**

Sampling place coordinates	Sample N	Noise DB	Concentration mg/m <sup>3</sup>					Hydrogen sulfide H <sub>2</sub> S
			Saturated hydrocarbons	Carbon oxide CO	Nitrogen dioxide NO <sub>2</sub>	Dust	Sulfur dioxide SO <sub>2</sub>	
Tsvermagala X 0731286 Y 4643708	1	40,6	0	024	<0,001	0,001	<0,1	<0,1
	2	66,4	<0,1	1,07	<0,001	0,002	<0,1	<0,1
	3	68,2	<0,1	0,93	0,008	0,004	<0,1	<0,1
	4	60,0	1	0,87	0,003	0,011	<0,1	<0,1
Laituri X 0734834 Y 4649812	1	40,1	0	0,15	<0,001	0,002	<0,1	<0,1
	2	60,0	<1	1,17	0,008	0,005	<0,1	<0,1
	3	59,2	<1	1,02	0,066	0,003	<0,1	<0,1
	4	64,4	<1	0,97	0,005	0,003	<0,1	<0,1
Shekvetili X0729536 4646583	1	69,7	<1	0,83	0,001	0,004	<0,1	<0,1
	2	73	1	1,21	0,007	0,005	<0,1	<0,1
	3	71,2	1	1,30	0,007	0,005	<0,1	<0,1
	4	74,9	1	0,53	0,006	0,051	<0,1	<0,1
Kaprovani X 0729313 Y 4650077	1	54,3	<1	0,03	0,001	0,007	<0,1	<0,1
	2	57,2	<1	0,13	0,001	0,06	<0,1	<0,1
	3	56,2	<1	0,12	0,001	0,03	<0,1	<0,1
	4	55,1	1	1,04	0,001	0,03	<0,1	<0,1

55. Environmental measurements were not carried out by the contractors under the Reg-02/Mestia and construction of Tbilisi Head Office projects. Environmental measurements of air, dust and noise will be carried out in February 2017 and results will be reflected in January-June EMR 2017.

### PART III - ENVIRONMENTAL MANAGEMENT

#### 3.1 The Environmental Management System, site-specific environmental management plan (SSEMP) and work plans

##### SSEMPs prepared under Ure-01 and Reg-02 project:

56. SSEMP for Rez#1 have been updated by contractor, endorsed by Supervision Company and approved by UWSCG and reviewed/commented by the RETA Regional Environmental Consultant of ADB - Ms. Ketu Dgebuadze.

**Table 6: Status of Site-Specific Environmental Management Plans**

SSEMP	Status	Date of Submission
Site-Specific EMP (SSEMP) under Ure-01 project	Sent to ADB and approved	14 November 2016

### 3.2 Site Inspections and Audits

- 57.** Regular site monitoring visits were carried out during the reporting period by the Supervision Consultant Eptisa and PIU - UWSCG for Ure-01, Reg-02 and Tbilisi Head Office projects. Some monitoring visits were conducted jointly by the SC/EMS and ES of USIIP. During the field visits a number of EHS issues were noted and brought to the attention of the Environmental Consultant and the H&S manager of Ure-01, Reg-02 and Tbilisi Head Office projects. Mitigation measures were then discussed with the contractor on-site and detailed instructions were given. Good Practice in compliance with Georgian and international H&S legislation were therefore enforced in accordance with the legislation and the Contractor's contract for Reg-02 and Ure-01 projects.
- 58.** Site inspection and audit during the reporting period have been carried out on: 12-13 July 2016, 15-16 September 2016, 28-30 September 2016, 9-10 November 2016 and 18-20 November 2016. The schedule of conducted monitoring and audit during the reporting period is presented in the Table 7 below.

**Table 7: The Schedule of Conducted Audits and Monitoring during the Reporting Period**

#	Ure-01, Reg-02 and Tbilisi Office Building Site visits	Organization	Date
1	Site audit	Environmental specialist of USIIP and Eptisa environmental specialists	Site audit of Tbilisi Head office have been carried out regularly (weekly)
2	Site audit	Environmental specialist of USIIP and Eptisa environmental specialists	12-13.07.2016
3	Site audit	Environmental specialist of USIIP and Eptisa environmental specialists	15-16.08. 2016
4	Site audit	Environmental specialist of USIIP and Eptisa environmental specialists	28-30.08. 2016
5	Site audit	Eptisa environmental specialists	9-10.11.2016
6	Site audit	Environmental specialist of USIIP and Eptisa environmental specialists	18-20.11. 2016

### 3.3 Non-Compliance Notices

#### URE-01

59. The contractors were always informed on the detected non-compliances and were demanded to improve on the deadline set and send photos of improvements made together with the corrective action plans. Environmental team of Eptisa and UWSCG monitored the improvements during the next monitoring visits. Unimproved environmental issues were qualified as non-compliances and notices issued to contractor (Annex C).
60. A summary of the identified issues during the site monitoring by EMS/SC and USIIP ES, recommended mitigations and the status of implementation is presented in Annex D.
61. Non-compliance notices have been issued by SC/Eptisa under Ure-01 project in following date: 15-16 September 2016 and 9-10 November 2016 and on 9-10 November for Reg-02 project (see Annex C).

### 3.4 Corrective Action Plans

62. For the purpose of resolving the observed issues, the corrective action plans have been developed by the contractor. The regular Environmental Meetings were also carried out with the participation of UWSCG/IPMO/UREP, Eptisa, contractors. During the meetings environmental issues and implementation of the mitigation measures were discussed. Agreements were reached that contractors should respond to the findings of the compliance monitoring carried out by SC and UWSCG.

**Table 8:** Actions taken for Implementation of Mitigation Measures under Ure-01 Projects

#### REG-01

Construction Site	Environmental Issues	Action taken
Kutaisi/ Kldiashvili Pumping Station	Noise emission of the Pumping Station is obviously high and NOT acceptable and exceed standards	<b>Partially Completed</b>  Cobra has implemented first stage works for noise reduction, consisting only in installing noise absorbing panels in the inner parts of doors and window. While the situation has improved and accordingly noise was reduced, new noise measurements carried out by Eptisa at night time,

Construction Site	Environmental Issues	Action taken
		when the threshold is the strictest by national regulations (45dB) show that problem is not solved with only this first stage works, so the complete noise reduction works included in Variation Order 9 must be implemented.

#### URE-01

Construction Site	Environmental Issues	Action taken
Ureki/Well Fields	Fuel/oil spill response items (sand, sawdust, special containers) should available	Completed
	Fencing of the site is to be established	Completed
	Topsoil should be managed according to the SSEMP	Partially Completed
	Machinery and equipment should be in standard technical condition (no leakage of fuel and lubricants)	Partially Completed
	All containers of fuel and lubricants should be placed in a special place with roofing	Partially Completed
	Bentonite waste should be managed according to SSEMP	Partially Completed
Ureki/Pumping Station	Proper place for Parking with relevant sign should be arranged	Completed
	All construction materials should be properly segregated and stored adequately	Completed
	Fuel/oil spill response items (sand, sawdust, special containers) should be equipped with relevant signs	Completed
	Machinery and equipment should be in standard technical condition (no leakage of fuel and lubricants)	Completed
	All workers (even personnel of subcontractor) should be equipped with complete PPE	Completed
	Site internally should be arranged properly and cleaned regularly	Completed
Ureki/Network	Enough and high visible safety signs/tapes and trench side barriers around of deep open trenches should be installed to avoid accident of population	Completed
	Use tarpaulins to cover during materials transportation	Not Completed

Construction Site	Environmental Issues	Action taken
	Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents	Not Completed
	Accumulated waste soil should be removed from construction area and disposed in a proper place	Completed

## REG-02 Mestia

Construction Site	Environmental Issues	Action taken
	Reservoirs construction sites should be fenced from all sides and equipped with lockable gate with proper warning and information signs	Partially Completed
	Trees at the construction zone should be protect to avoid its damage	Not Completed
	Proper warning and information signs should be arranged at the entrance, inside and perimeter of construction sites	Completed
	Reservoirs construction territories should be lighted adequately	Completed
	Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents	Partially Completed
	Proper Parking area should be arranged at the adequate place	Completed
	The reservoirs access roads and internal roads should be arranged properly (covered with gravel)	Not completed
	Fuel/oil spill response items (sand, sawdust, special containers) should be available at the reservoir construction sites	Not completed
	Household and Hazardous Waste containers with relevant sign should be installed at the reservoir construction sites in proper places	Not completed
	Surplus/accumulated waste soil should be taken away for its final disposal. Soil for backfilling purposes should be stored properly	Completed
	Reservoirs construction sites should be fenced from all sides and equipped with lockable gate with proper warning and information signs	Partially Completed

## TBILISI HEAD OFFICE

Construction Site	Environmental Issues	Action taken
	Proper warning and information signs should be arranged at the entrance, perimeter and inside of construction site	Partially Completed
	Excavated pit and tranches are not surrounded with warning tapes	Not Completed
	Toilet facilities are not arranged	Not Completed
	Trees at the construction site should be protect to avoid its damage	Partially Completed
	Existing temporary, electrical connection is unacceptable from safety point of view	Partially Completed
	Proper fuel/oil spill response items (sand, sawdust, special containers) should be available at the site	Completed
	Household Waste containers with relevant sign should be installed in proper place	Not completed
	First aid kits are not provided	Not completed
	Use tarpaulins to cover during materials transportation	Not completed
	Site internally should be arranged properly and cleaned regularly	Partially Completed

63. An Annual Environmental Compliance Safeguard Review Mission was carried out on 29-30 September 2016 to review environmental safeguards compliance of Tranche 1 project.

### 3.5 Actions taken to reflect the findings of ADB mission carried out on 29-30 September 2016 :

**Table 9: Status of Findings of ADB Mission Carried Out on 29-30 September 2016**

Project	Specific Issues	Deadline for submission/Implementation	Implementation Status
Status of findings of ADB mission carried out on 29-30 September 2016			
Ure-01 Rehabilitation of the Water Supply System in Ureki			
	SSEMP for reservoir 1 will be updated due to the fact that location and design for Res#1 is changed.	May 2016	The updated SSEMP for Res-#1 is prepared by consultant, endorsed by Eptisa and approved by UWSCG on November 2016.

Project	Specific Issues	Deadline for submission/Implementation	Implementation Status
	SSEMP for reservoir 3 will be prepared after selection of final territory.		SSEMP for reservoir number 3 will be developed after the final location will be agreed and approved.
	All documents are available at camp site except agreement with Municipal Waste Disposal Agency and filled checklists of CC environmental specialist.		<p>Contractor has provided agreement with the Municipal Waste Disposal Agency which is now available at contractor's camp site</p> <p>The contractor conducted a visual inspection for daily monitoring of sites.</p> <p>During the reporting period, the weekly monitoring form has been developed by SC/Eptisa, which has to be filled by the environmental specialist of contractor on the weekly basis (See. Annex F).</p>
	Company Waste Management Plan (CWMP) is under preparation and will be submitted to the MoENRP for approval till December 2016 according to the new Waste Management Code of Georgia (accepted in January 2015).	December 31, 2016	Will be prepared and submitted by the end of December



### **Actions taken regarding the action plan of the EMR January-June 2016:**

- Contractor to update, SC to endorse and UWSCG to approve SSEMP for Res-1 under Ure-01 projects (September 2016). Completed in November 2016.
- Contractor to develop, SC to endorse and UWSCG to approve SSEMP for Res-3 under Ure-01 projects (September 2016). Not completed, it will be prepared after the completion of design and selection of the final locations for the construction.
- Carry out post construction environmental audit of Reg-01 projects in Kutaisi, Poti and Anaklia (September 2016) and prepare Final Environmental Audit Report. Completed. Post construction environmental audit report is prepared in December 2016.
- Inspection and monitoring of Construction sites including Mestia WTP and Shkedi Reservoir was carried out in September 2016. Completed, monitoring was carried out in November 2016, Non-compliance notice was developed and sent to contractor.
- Monitoring of environmental quality under Ure-01 was conducted in November 2016 – completed.

### **3.6 Consultations and Complaints**

#### **Public Awareness Activities:**

- 64.** During the reporting period public awareness activities in Kutaisi focused on meetings with local population, local self-governance representatives and NGO sector to find out main challenges and issues on which local population would like to receive more information.

#### **Consultation meetings with the local population**

- 65.** On December 9, Eptisa local PA consultant together with the UWSCG representatives met with local municipality, NGO sector and local population in Ureki. The aim of the consultation meeting was to raise the awareness on a project and discuss PA activities that Eptisa plans to implement in Ureki in partnership with UWSCG local office. Also to identify main issues and concerns of the population and topic on which they would like to receive more information.
- 66.** The first part of the meeting was dedicated to the project presentation. Main activities that Eptisa PA consultants implement in cooperation with the UWSCG PR department to raise the awareness of population on the project and safe and wise water consumption were also presented and discussed. Presentations were followed by Q and A session. Overall the meeting was very constructive and both representatives of the local population and local municipality were actively engaged in discussion. At the end of the meeting local self-governance representatives expressed interest to support the door to door campaign in Ureki by assigning their volunteers who can support Eptisa and UWSCG representatives in implementation of the door to door campaign. It was agreed that prior to the commence of the door to door in Ureki Eptisa PA consultants will train local municipality volunteers who express interest to carry out the door to door campaign.
- 67.** At the end of the meeting the representatives of the local population and municipality offered recommendations and identified some challenges that need to be taken care in order to start the Public Awareness campaign for URE-01.

Recommendations identified during the meeting included:

68. The local self-government representatives asked the construction company and Eptisa representatives to take into consideration that it would be important if the water supply system will also be constructed for the population living near the Tsvermagala reservoir. Population near the reservoir is distracted by noise without having any benefits from the rehabilitation as process does not envisage water supply system rehabilitation for these settlements.
69. As UWSCG does not have a service center in Ureki representatives of the local NGOs asked Eptisa local PA consultant to serve as a liaison and regularly update them about the project progress and activities. Also facilitate discussions and consultation meetings.

The following challenges were also identified during the meeting:

70. Number of exact beneficiaries of the project is not identified. Therefore the UWSCG representatives were asked to seek for this information from the company that provides electricity to the region.
71. The current project in Ureki envisages water and sewage rehabilitation for private houses only. But apart from the houses there are also 7 apartment buildings in Ureki. Some of them have an old individual sewage system in place but these systems in most cases are outdated. Local population asked UWSCG representatives to include these apartment buildings in the project as well.
72. Local population is also interested what will be the tariff of the water consumption for those sole proprietors who rent out rooms for tourists during summer period.

#### **Public Opinion Survey**

73. During the reporting period Eptisa PA consultants implemented a small public opinion survey in Ureki to find out how well the effected population was informed about the project and what were the main issues, topics that the population was interested to receive more information on. Also how, through which communication channels, they would like to receive this information.
74. Special questioner was developed for the survey based on which 30 households were interviewed.
75. As a result of the survey it was identified that the local population is not sufficiently informed about the project but the interest towards the project is very high therefore population is eager to receive more information about the water supply and sanitation rehabilitation project. The water supply system rehabilitation project is very important for the population of Ureki as these are touristic areas and most of the households are either owners of hotels or rent houses or flats during the summer season.
76. According the survey the most important issues on which population would like to receive more information are: project timelines, water tariffs, quality of the potable water, connection process to the main pipeline and wise water consumption.
77. Most of the surveyed households would prefer to receive information about the project through information brochures, door to door campaign and consultation meetings.
78. Upcoming public awareness activities in for URE-01 project will be planned based on the survey results and in coordination with UWSCG and local self-governance.

#### **Grievance Committee**

79. During the reporting period a grievance committee was created for URE-01 project consisting of representatives of UWSG, local self-governance, civil society and

local households. In parallel UWSCG office in Ozurgeti (that covers Ureki region) opened special registry of grievances for URE-01 project.

## **Trainings**

80. Environmental safeguard training was conducted by Eptisa on 1 September 2016, at Eptisa's head office in Tbilisi. The following topics were discussed during the training course: Environmental Management Plan (EMP); Site-Specific Environmental Management Plan (SSEMP); Environmental Impact and Mitigation Measures during Construction phase; Case studies of Environmental Impact by Contractor and proposed Mitigation Measures. Training was attended by the representatives of the environmental team of Contractors under Ure-01 and Reg-02 projects and UWSCG/UREP. It was suggested during the training to hold such training on the regular basis.
81. In addition to this on site environmental safeguard trainings were organized for URE-01 and reg-02 project contractors on a regular basis, during the site visits. Environmental specialists of the above mentioned contractors were introduced with all necessary safeguard requirements of ADB/SPS 2009. The main issues of discussion were the site management and implementation of mitigation measures in accordance with the EMP/SSEMPs.

### **Grievance redresses mechanism (GRM)**

82. For the effective implementation of a GRM system under the USIIP, UWSCG issued special order (#122) on 30 April 2014. The "Establishment of GRM within the Framework of the Asian Development Bank Funded Projects" signed by the head of UWSCG gives clear instructions to every involved stakeholder how to act when affected people are impacted by the project. Detail procedures for GRM System is provided in Annex E.
83. During the reporting period up to 10 complains have been received under Ure-01 and Reg-02 projects. These complaints were related to the problems concerning the water supply due to the damages on the water pipes, dropping of waste soil or construction waste on the street. All complains were resolved on the first level, by involving UWSCG/service center, contractor and supervision company.

## **PART IV – CONCLUSIONS AND ACTION PLAN FOR THE NEXT PERIOD**

### **4.1 Conclusions and recommendations**

84. As presented in this report, Tranche-1 of this Investment Program is being implemented in compliance with the ADB Safeguards Policy Statement, 2009, National Legislation and overall EARF.
85. Necessary instructions have been given to the Contractor by UWSCG and SC to follow the EMPs and SEMP's under Reg-02 and Ure-01 projects.
86. More detailed recommendations with indication of the entities responsible for their implementation are provided in the table 10 below:

**Table 10:** Recommendations to Address Environmental Issues under Reg-02 and Ure-01 projects

Recommendations Reg-02 Mestia	
Topsoil should be managed according to the SSEMP	Contractor
Site internally should be arranged properly and cleaned regularly	Contractor
To cut down only those trees that are marked and permitted for cutting	Contractor
All other site trees should be fenced and protected to avoid its damage	Contractor
Household and hazardous Waste containers should be installed with relevant signs	Contractor
All construction materials should be properly segregated and stored adequately	Contractor
Recommendations URE-01 Ureki Well field	
Fuel/oil spill response items (sand, sawdust, special containers) should be equipped with relevant signs	Contractor
Machinery and equipment should be in standard technical condition (no leakage of fuel and lubricants)	Contractor
Use tarpaulins to cover during materials transportation	Contractor
Site internally should be arranged properly and cleaned regularly	Contractor
Fencing of the site is to be established	Contractor
Topsoil should be managed according to the SSEMP	Contractor

87. Mitigation measures to be implemented by the contractor under the Reg-01 project (Construction of Water Supply Infrastructure in Anaklia, Kutaisi and Poti) in accordance to the Final Audit Report are presented in the Table 11 below.

**Table 11:** Schedule of mitigation measures to be implemented by the contractor Under Reg-01 project

Construction Site	Noncompliance	Corrective Action	Time
Darcheli Reservoir Site	Scrap metal and wooden waste is scattered in an uncontrolled manner on the site of Darcheli reservoir	The scrap metal and wooden waste scattered in an uncontrolled manner on the site of Darcheli reservoir must be removed from the site by the Contractor	February 2017
Darcheli Reservoir	The generator unit on the territory of Darcheli sub-station running on diesel is not placed	The generator must be placed on the secondary tank. The volume of the secondary tank must be at	April 2014

Construction Site	Noncompliance	Corrective Action	Time
Site	on a secondary tank. In case of diesel spill, there is a danger of the soil and underground waters pollution	least 110% of the generator diesel capacity.	
	As the security staff stated, there is no an office for the security staff on the territory of Darcheli reservoir where they can overnight or have a rest. Consequently, they have to overnight and rest in their own car.	At the initial stage, a temporary container is absolutely necessary to install on the territory of Darcheli reservoir with the permanent building to be designed and constructed consequently	June 2017
Nabada Reservoir Site	The site of Nabada reservoir is fenced, but it has no gate making it possible for the animals to move around the reservoir site	At the initial stage, it is necessary to install a temporary gate, or a 24-hour security service is to be introduced at the entrance to the area where the gate is to be installed later, in order to avoid the penetration of animals to the site. At the second stage, a permanent gate must be installed as it is envisaged by the project.	June 2017
Nabada Reservoir Site	The project envisaged the disassembly of the existing reservoir on the territory of Nabada and removal of the construction waste from the area. At present, only the upper ground layer of the existing reservoirs is removed, while the underground part of the reservoir is untouched. As it rains, the rainwater is accumulated on the site resulting in two basin-like units on the site of the reservoir	The old reservoirs on the territory must be totally disassembled and the construction materials must be removed and disposed as per the legislative requirements.	July 2017
Nabada Reservoir Site	The site of the reservoir is not leveled and in case of abundant precipitations, large part of the reservoir area is flooded increasing the risk of pollution of the underground waters	The sewage pumping system on the site of Nabada reservoir is not complete contributing to the increased risk of pollution of underground waters	July 2016
Nabada Reservoir Site	The sewage pumping system on the site of Nabada reservoir is not complete contributing to the increased risk of pollution of underground waters	The installation and exploitation of the sewage pumping unit is to be accomplished.	July 2016 <i>Comment: Will be improved under Pot-01 Project</i>

## 4.2 Action Plan for the next period

1. Conduct monitoring of environmental quality under Ure-01 project at network site, Pumping Station and Rez-01 by the end of February 2017.

**Table 12:** The Specific Plan for Environmental Measurement under Ure-01 Project

Parameters	Quarterly measurement
Dust	February 2017
Vibration	February 2017
carbon monoxide	February 2017
nitrogen dioxide	February 2017
sulfur dioxide	February 2017
Noise	February 2017

2. Conduct monitoring of environmental quality under REG-02 in Mestia on the following sites: Shkedi Reservoir and access road, Lanchvali reservoir and Zargashi WTP by the end of February 2017.

**Table 13:** The Specific Plan for Environmental Measurement under Reg-02 Project

Parameters	Quarterly measurement
Dust	February 2017
Vibration	February 2017
carbon monoxide	February 2017
nitrogen dioxide	February 2017
sulfur dioxide	February 2017
Noise	February 2017



# ANNEXES:

## ANNEX A: MONITORING MEASUREMENTS DATA

### Concentration of harmful substances in atmospheric 15.11.2016

Sampling place coordinates	Sample N	Noise DB	Concentration mg/m <sup>3</sup>					
			Saturated hydrocarbons	Carbon oxide CO	Nitrogen dioxide NO <sub>2</sub>	Dust	Sulfur dioxide SO <sub>2</sub>	Hydrogen sulfide H <sub>2</sub> S
Tavernagala X 0731286 Y 4643708	1	40.6	0	0.24	<0.001	0.001	<0.1	<0.1
	2	66.4	<0.1	1.07	<0.001	0.002	<0.1	<0.1
	3	68.2	<0.1	0.93	0.008	0.004	<0.1	<0.1
	4	60.0	1	0.87	0.003	0.011	<0.1	<0.1
Laituri X 0734834 Y 4649812	1	40.1	0	0.15	<0.001	0.002	<0.1	<0.1
	2	60.0	<1	1.17	0.008	0.005	<0.1	<0.1
	3	59.2	<1	1.02	0.066	0.003	<0.1	<0.1
	4	64.4	<1	0.97	0.005	0.003	<0.1	<0.1
Shekvetili X0729536 4646583	1	69.7	<1	0.83	0.001	0.004	<0.1	<0.1
	2	73	1	1.21	0.007	0.005	<0.1	<0.1
	3	71.2	1	1.30	0.007	0.005	<0.1	<0.1
	4	74.9	1	0.53	0.006	0.051	<0.1	<0.1
Kaprovani X 0729313 Y 4650077	1	54.3	<1	0.03	0.001	0.007	<0.1	<0.1
	2	57.2	<1	0.13	0.001	0.06	<0.1	<0.1
	3	56.2	<1	0.12	0.001	0.03	<0.1	<0.1
	4	55.1	1	1.04	0.001	0.03	<0.1	<0.1

Executors:  
Main specialist  
Main specialist  
Specialist

Agreed:  
Head Environmental Pollution  
Monitoring Department



O. Kenia  
S. Khatsava  
G. Morgoshia  
M. Arabidze

## ANNEX B: PROJECT PHOTOS

### Ure-01







**Ure-01: Well fields**





**Ure-01: Pumping Station**

**Reg-02/ Mestia**



**Reg-02: Lanchvali Rezervoir**



**Reg-02: Shkedi Rezervoir**






**Reg-02: Shkedi Rezervoir Access road**



## ANNEX C: NON-COMPLIANCE NOTICES

Ure-01

### Non-Compliance Notice

<b>Project: USIIP</b>	<b>Non-compliance Notice</b> <b>UREKI</b>
<b>Contract No: URE-01</b>	
<b>Contractor: PERI</b>	
<b>Reference:</b> <b>UREKI - UREKI PAMPING STATION</b>	
This notice is to advice you, the prime Contractor, on the referenced Contract, of the following notice on environmental measures to be implemented <b>urgently</b> .	
<p><b><u>NON-COMPLIANCE IN UREKI</u></b></p> <p><b>PAMPING STATION</b></p> <ul style="list-style-type: none"><li>- Proper place for Parking with relevant sign should be arranged</li><li>- All construction materials should be properly segregated and stored adequately</li><li>- Fuel/oil spill response items (sand, sawdust, special containers) should be equipped with relevant signs</li><li>- Machinery and equipment should be in standard technical condition (no leakage of fuel and lubricants)</li><li>- Use tarpaulins to cover during materials transportation</li><li>- All workers (even personnel of subcontractor) should be equipped with complete PPE</li><li>- Site internally should be arranged properly and cleaned regularly</li></ul> <div></div>	



All these conditions have to be remedied within five days (by the 25 September 2016) by the prime Contractor (Peri).

**Date of site visits: 15 - 16.09.16**

Irakli Legashvili

EPTISA - Environment

## Non-Compliance Notice

**Project: USIIP**

**Contract No: URE-01**

**Contractor: PERI**

**Reference:**

**UREKI - WELLFIELD**

**Non-compliance Notice**

**UREKI**

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



## **NON-COMPLIANCE IN UREKI**

### **WELLFIELD**

- Fuel/oil spill response items (sand, sawdust, special containers) should available
- Fencing of the site is to be established
- Topsoil should be managed according to the SSEMP
- Machinery and equipment should be in standard technical condition (no leakage of fuel and lubricants)
- All containers of fuel and lubricants should be placed in a special place with roofing
- Bentonite waste should be managed according to SSEMP



All these conditions have to be remedied within five days (by the 25 September 2016) by the prime Contractor (Peri).

**Date of site visits: 15 - 16.09.16**

Irakli Legashvili

EPTISA - Environment

## Non-Compliance Notice

Project: USIIP	Non-compliance Notice  UREKI
Contract No: URE-01	
Contractor: PERI	
Reference:  UREKI – NETWORK, RESERVOIR	
This notice is to advice you, the prime Contractor, on the referenced Contract, of the following notice on environmental measures to be implemented <b>urgently</b> .	

## NON-COMPLIANCE IN UREKI

### NETWORK

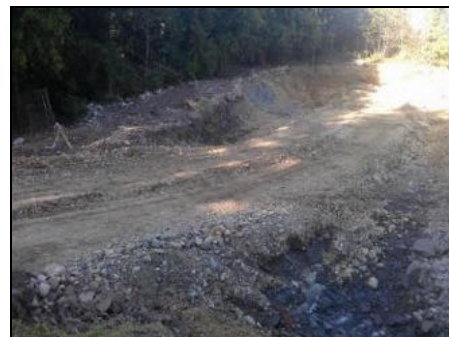
- Protect trees to avoid its damage during transmission line construction
- Enough and high visible safety signs/tapes and trench side barriers around of deep open trenches should be installed to avoid accident of population
- Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents
- Accumulated waste soil should be removed from construction area and disposed in a proper place
- Use tarpaulins to cover during materials transportation
- Workers always should use complete PPE



### RESERVOIR



- Trees at the construction site should be protect to avoid its damage
- Site should be fenced from all sides and equipped with lockable gate with proper warning and information signs
- Proper warning and information signs should be arranged at the entrance, perimeter and inside of construction site
- Safety signs/tapes and trench side barriers should be installed around of excavation of reservoir
- Household Waste containers with relevant sign should be installed in proper place
- Hazardous Waste containers with relevant sign should be installed in proper place
- Workers always should use complete PPE
- Site internally should be arranged properly and cleaned regularly



All these conditions have to be remedied within five days (by the 20 November 2016) by the prime Contractor (Peri).

**Date of site visits: 09.11-10.11.16**

Irakli Legashvili

EPTISA - Environment

## Non-Compliance Notice

Project: USIIP	Non-compliance Notice  MESTIA
Contract No: REG-02	
Contractor: PFIEFFER	
Reference:  MESTIA – RESERVOIRS SITES	

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

**NON-COMPLIANCE IN MESTIA****MESTIA SITE**

- Reservoirs construction sites should be fenced from all sides and equipped with lockable gate with proper warning and information signs
- Trees at the construction zone should be protect to avoid its damage
- Proper warning and information signs should be arranged at the entrance, inside and perimeter of construction sites
- Reservoirs construction territories should be lighted adequately
- All open tranches should be fenced with enough and high visible safety signs/tapes to avoid accident of population
- Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents
- Proper Parking area should be arranged at the adequate place
- The reservoirs access roads and internal roads should be arranged properly (covered with gravel)
- Fuel/oil spill response items (sand, sawdust, special containers) should be available at the reservoir construction sites
- Household and Hazardous Waste containers with relevant sign should be installed at the reservoir construction sites in proper places
- Surplus/accumulated waste soil should be taken away for its final disposal. Soil for backfilling purposes should be stored properly
- All construction materials should be properly segregated and stored adequately
- PPE equipment should be used always and completely by all workers (even personnel of subcontractor)
- During working at heights special equipment should be used
- Site internally should be arranged properly and cleaned regularly





Lanchvali Reservoir



Lanchvali Reservoir



Lanchvali Reservoir



Lanchvali Reservoir



Lanchvali Reservoir



Lanchvali Reservoir



Lanchvali Reservoir



Lanchvali Reservoir



Lanchvali Reservoir



Shkeda Reservoir



Shkeda Reservoir



Shkeda Reservoir





Shkeda Reservoir



Shkeda Reservoir



Shkeda Reservoir



Shkeda Reservoir



Shkeda Reservoir



Shkeda Reservoir



Shkeda Reservoir access road



Shkeda Reservoir access road



Shkeda Reservoir access road



Shkeda Reservoir access road



Shkeda Reservoir access road



Shkeda Reservoir access road





Zargashi WTP



Zargashi WTP



Zargashi WTP



Zargashi WTP



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Zargashi WTP



Zargashi WTP



Mestia Network



Mestia Network



Mestia Network



Mestia Storage



Mestia Storage



Mestia Storage

All these conditions have to be remedied within five days (by the 20 November 2016) by the prime Contractor (Pfeiffer).

**Date of site visits: 09.11-10.11.2016**

Irakli Legashvili - EPTISA Environment

## Non-Compliance Notice

<b>Project: USIIP</b>	<b>Non-Conformity Report N° 01</b>
<b>Contract No: TBI-01</b>	
<b>Contractor: DAGI Ltd</b>	
<b>Reference: Construction of New Office Building for UWSCG (Tbilisi)</b>	
This notice is to advise you, the prime Contractor, on the referenced Contract, of the following notice on environmental measures to be implemented <b>urgently</b> .	
<p style="text-align: center;"><b><u>NON-COMPLIANCE IN TBILISI</u></b> <b>Construction of New Office Building</b></p> <ul style="list-style-type: none"> <li>▪ <b><i>Environmental, Health and safety specialist(s) of contractor should be appointed URGENTY!</i></b></li> <li>▪ Proper warning and information signs should be arranged at the entrance, perimeter and inside of construction site</li> <li>▪ Excavated pit and tranches are not surrounded with warning tapes</li> <li>▪ Toilet facilities are not arranged</li> <li>▪ Trees at the construction site should be protect to avoid its damage</li> <li>▪ Existing temporary, electrical connection is unacceptable from safety point of view</li> <li>▪ Proper fuel/oil spill response items (sand, sawdust, special containers) should be available at the site</li> <li>▪ Household Waste containers with relevant sign should be installed in proper place</li> <li>▪ Hazardous Waste containers with relevant sign should be installed in proper place</li> <li>▪ First aid kits are not provided</li> <li>▪ Use tarpaulins to cover during materials transportation</li> <li>▪ Site internally should be arranged properly and cleaned regularly</li> <li>▪ Workers always should use complete PPE</li> </ul>	
All these conditions have to be remedied within seven days (by the 20 December 2016) by the prime Contractor (Peri).	
<b>Date of site visits: 13.12.2016</b>	
Irakli Legashvili EPTISA – Environmental Specialist	
Manuel Benavides EPTISA – Project Manager	

## ANNEX D: IMPLEMENTATION REPORT ON THE ENVIRONMENTAL IMPACT ASSESSMENT

(EIA) /INITIAL ENVIRONMENTAL EXAMINATION (IEE) MITIGATION REQUIREMENTS:

Reference	Requirement	Action to date	Action required/comment
<b>Reg-01 Kutaisi Kldiashvili</b>			
	Implement all measures to reduce noise level at Kutaisi Kldiashvili reservoir	Contractor/Cobra has implemented first stage works for noise reduction, that substantially improve the situation	While the situation has improved, new noise measurements carried out by Eptisa at night time show that problem is not solved with only this first stage works, so the complete noise reduction works included in Variation Order 9 will be implemented by contractor.
<b>Ure-01 Well Fields</b>			
	Bentonite waste should be managed according to SSEMP	Partially completed	Instruction is given to contractor to improve the situation
	Topsoil should be managed according to the SSEMP	Partially completed	Instruction is given to contractor to improve the situation
	Machinery and equipment should be in standard technical condition (no leakage of fuel and lubricants)	Partially completed	Instruction is given to contractor to improve the situation
	All containers of fuel and lubricants should be placed in a special place with roofing	Partially completed	Instruction is given to contractor to improve the situation
<b>Ure-01 Pumping Station</b>			
	Proper place for Parking with relevant sign should be arranged	Completed	No additional actions are required
	All construction materials should be properly segregated and stored adequately	Completed	No additional actions are required
	Fuel/oil spill response items (sand, sawdust, special containers) should be equipped with relevant signs	Completed	No additional actions are required
	Machinery and equipment should be in standard technical condition (no	Completed	No additional actions are required



	leakage of fuel and lubricants)		
	All workers (even personnel of subcontractor) should be equipped with complete PPE	Completed	No additional actions are required
	Site internally should be arranged properly and cleaned regularly	Completed	No additional actions are required
<b>Ure-01</b>			
<b>Networks</b>			
	Enough and high visible safety signs/tapes and trench side barriers around of deep open trenches should be installed to avoid accident of population	Completed	Enough and high visible safety signs/tapes and trench side barriers around of deep open trenches should be installed to avoid accident of population
	Use tarpaulins to cover during materials transportation	Not Completed	Use tarpaulins to cover during materials transportation
	Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents	Not Completed	Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents
	Accumulated waste soil should be removed from construction area and disposed in a proper place	Completed	Accumulated waste soil should be removed from construction area and disposed in a proper place
<b>Reg-02 / Mestia</b>			
	Reservoirs construction sites should be fenced from all sides and equipped with lockable gate with proper warning and information signs	Partially Completed	Needs additional improvement, lockable gate should be arranged with standard warning and information signs
	Trees at the construction zone should be protect to avoid its damage	Not Completed	Instruction is given to protect all trees on site and avoid its damage
	Proper warning and information signs should be arranged at the entrance, inside and perimeter of construction sites	Completed	
	Reservoirs construction territories should be lighted adequately	Completed	
	Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents	Partially Completed	Instruction is given to follow the standard and protect health and safety of workers
	Proper Parking area should be	Completed	

	arranged at the adequate place		
	The reservoirs access roads and internal roads should be arranged properly (covered with gravel)	Not completed	Due to the weather condition Instruction is given to contractor to improve the situation as soon as it will be possible.
	Fuel/oil spill response items (sand, sawdust, special containers) should be available at the reservoir construction sites	Not completed	Instruction is given to contractor to improve the situation
	Household and Hazardous Waste containers with relevant sign should be installed at the reservoir construction sites in proper places	Not completed	Instruction is given to contractor to improve the situation
	Surplus/accumulated waste soil should be taken away for its final disposal. Soil for backfilling purposes should be stored properly	Completed	

#### Tbilisi Head Office

	Proper warning and information signs should be arranged at the entrance, perimeter and inside of construction site	Partially Completed	UWSCG met with representatives of the construction company DAGI and discuss how to improve the situation as quickly as possible, it was agreed that DAGI will develop Corrective Action Plan and submit to UWSCG
	Excavated pit and tranches are not surrounded with warning tapes	Not Completed	Instruction is given to contractor to improve the situation
	Toilet facilities are not arranged	Not Completed	Instruction is given to contractor to improve the situation
	Trees at the construction site should be protect to avoid its damage	Partially Completed	
	Existing temporary, electrical connection is unacceptable from safety point of view	Partially Completed	
	Proper fuel/oil spill response items (sand, sawdust, special containers) should be available at the site	Completed	
	Household Waste containers with relevant sign should be installed in proper place	Not completed	Instruction is given to contractor to improve the situation
	First aid kits are not provided	Not completed	Instruction is given to contractor to improve the situation
	Use tarpaulins to cover during materials transportation	Not completed	Instruction is given to contractor to improve the situation
	Site internally should be arranged properly and cleaned regularly	Partially	

		Completed	
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## ANNEX E:

### Grievance redresses mechanism (GRM)

88. There was no GRM system existing under USIIP before the Reg-01 project. Therefore, there was no structured mechanism and procedure to help the affected population and stakeholders send their grievances related to project-induced environmental impacts and nuisances to UWSCG or directly to the administrative bodies responsible for environmental protection.
89. For the effective implementation of a GRM system under the USIIP, UWSCG issued special order (#122) on 30 April 2014. The “Establishment of GRM within the Framework of the Asian Development Bank Funded Projects” signed by the head of UWSCG gives clear instructions to every involved stakeholder how to act when affected people are impacted by the project.
90. After issuance of the special order, a GRM was first set up by UWSCG under the REG-01 project of USIIP (operational since April, 2014) that includes rehabilitation of water supply system in Kutaisi. The GRM allows affected people to appeal any disagreeable decision, practice or activity arising from project implementation.
91. Any affected person can apply at a UWSCG local service centre through different ways, either by going to the service centre, sending a letter to the service centre, or calling a hotline. The operators of the service centre can respond by going directly to the affected person if they are disabled to get the written grievance from them. As it was mentioned above the GRM in Kutaisi has been operational since April 2014, and the system operates in three stages:
92. During the first stage, complaints are discussed within two weeks of being received by the local service centre of UWSCG (e.g. Kutaisi office), based on the verbal or written complaint. In the first stage of grievance review and resolution, an authorized representative of the local service centre is responsible for ensuring the registration of the claim and its further processing. He/she engages in the grievance review and resolution process representatives (managers and environmental specialists) of Construction and Supervision Companies, and the representatives of UWSCG central office as required. At the local service centre, the affected person is provided with a queue number and then registers the grievance at the service desk.
93. The service centre operators, who are trained<sup>1</sup> in USIIP/Reg-01project, register all relevant grievances with support of an online task management system, which tracks information on the grievance review process and the responsible person. Moreover, the operators fill the ADB complaints log with the registered grievance that coincides with local internal forms. This electronic intranet system<sup>2</sup> allows the UWSCG Tbilisi Office to immediately see claims. Therefore, claims submitted to any regional service centre can be monitored by the Head of the Investment Projects Management Office (IPMO), as well as the Head of the Environmental and Resettlement Division, Maka Goderdzishvili.
94. When a grievance is solved positively in the first stage, the grievance is closed through an Agreement Protocol, which is reflected in the e-Document – Task Management System.

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<sup>1</sup> UWSCG and Supervision Consultant (Eptisa) conducted trainings for service center operators covering general procedures of GRM functioning in order to ensure proper coordination of different departments.

<sup>2</sup>The **eDocument - Task Management System** was developed by LEPL Financial-Analytical Service of the Ministry of Finance of Georgia. It is an innovative electronic document and task management mechanism for electronically processing of documents. Used by almost all the major budgetary organizations in Georgia, the eDocumentservice offers an opportunity to manage, find, and track documents for information-intensive organizations.

95. The grievance enters a second stage if it is not solved. In that case, the authorized representative of the local service centre will help the claimant prepare a package of grievance application documents for official submission to the Grievance Redress Committee (GRC). The package contains the following information:
- Name, ID, address and contact details of the claimant
  - Description of the essence of the complaint
  - Supporting documents and evidences (photos, maps, drawings/sketches, conclusion of experts or any other documents confirming the claim)
  - Brief description of the actions proposed for the grievance resolution at the first stage and the reasons why these actions were denied
  - Minutes of meetings conducted at the first stage
96. The GRC should make a decision within two weeks after the registration of the grievance. The GRC is staffed as follows: (i) Representative of self-government – the head of committee; (ii) Director/ Manager of UWSCG service centre; (iii) Investments Project Management Division representative of the company; (iv) Representative of local authoritative NGO (according to the claim reference); (v) Stakeholders' female representative; (vi) Stakeholders' informal representative; and (vii) Heads of local municipalities.
97. The GRC will review the package of grievance documents, set a date for a meeting with the claimant, discuss the claim at the meeting, and set up a plan for further actions (actions, responsible persons, schedule etc.). Upon the resolution of the case, the GRC will prepare a brief resume and protocol and the protocol signed by complainant and all parties will be registered in a grievance log.
98. There is a third stage in case there is a failure to resolve the grievance. In this case, GRC will help the claimant to prepare the documents for submission to the Rayon (municipal) court. They can also apply to ADB at the address below:
- *Complaints Receiving Officer, Accountability Mechanism*
  - *Asian Development Bank Headquarters*
  - *6 ADB Avenue, Mandaluyong City 1550, Philippines*
  - *Email: amcro@adb.org, Fax +63-2-636-2086*

## ANNEX F: WEEKLY ENVIRONMENTAL MONITORING FORMS

თარიღი/DATA

ყოველკვირეული გარემოსდაცვითი მონიტორინგი  
Weekly Environmental Monitoring

კონტრაქტის #:				ზედამხედველი: Eptisa		
Contract#:				Supervisor: Eptisa		
პროექტი/ობიექტი:				კონტრაქტორი:		
Project/Site:				Contractor:		
N		კი/ yes	არა /no	ნაწილ ობრივ/ Partially	არ ეხება /N.A	შენიშვნა/Comment
1	სამშენებლო ტერიტორიის სრულად შემოღობვა Adequate fencing of construction area from all sides					
2	საკეტისანი შესასვლელი კარის მოწყობა, სტანდარტული გამაფრთხილებელი და საინფორმაციო ნიშნებით აღჭურვა Arrangement of lockable gate with standard warning and information signs					
3	სამშენებლო ტერიტორიაზე და პერიმეტრზე სტანდარტული გამაფრთხილებელი და საინფორმაციო ნიშნების განთავსება Placement of standard warning and information signs at the perimeter and inside of construction area					
4	ღიად დატოვებულ თხრილებზე და ჭებზე უსაფრთხოების ლენტების, ბარიერების და გამაფრთხილებელი ნიშნების განთავსება Installation of safety signs/tapes and trench side barriers around of open trenches					
5	1,5 მეტრზე მეტი სიღრმის ტრანშეებში კედლების გამაგრება Strengthening of walls of the deep trenches (>1.5m) by boards					
6	დასახლებულ ადგილებში ღიად დატოვებულ					

	<p>თხრილებზე დროებითი გადასასვლელების მოწყობა</p> <p>Installation of proper temporary wooden/metal walkways/planks across open trenches in settlement areas</p>					
7	<p>სამშენებლო ტერიტორიაზე, სამუშაოების ზონაში არსებული ხეების შემორაგვა (დაზიანების თავიდან აცილების მიზნით)</p> <p>Protect all trees nearby construction zone to avoid its damage</p>					
8	<p>ექსკავაციის დროს, ნიადაგის ნაყოფიერი (დაახლოებით 20-30 სმ სისქის) ფენის მოხსნა და განცალკევებულად გროვებად შენახვა</p> <p>Removal of top soil (about 30 cm depth) and separately storing in appropriate place</p>					
9	<p>სამშენებლო ნარჩენების და ჭარბი ნარჩენი გრუნტის დროული გატანა/განთავსება</p> <p>Timely removal/disposal of construction waste and surplus waste soil</p>					
10	<p>სამშენებლო ტერიტორიის ღამის საათებში განათება</p> <p>Provide adequate lighting of construction territory</p>					
11	<p>სამშენებლო ტერიტორიის შესაბამისად მოწყობა მასალების და მოწყობილობების და დანადგარების ორგანიზებულად განთავსება (საჭიროებიდან გამომდინარე)</p> <p>Proper arrangement of construction site and segregation/storing of construction materials/equipment (bring the material when required)</p>					
12	<p>სამშენებლო ტერიტორიაზე საწვავის და საპოხი მასალების დაღვრის შედეგების სალიკვიდაციო ნაკრების (ქვიშა, ნახერხი, მცირე ზომის ავზი და სხვა) ხელმისაწვდომლობა</p> <p>Availability of proper fuel/oil spill response items (sand, sawdust, special containers) at the construction site</p>					
13	<p>საწვავის და საპოხი მასალების კონტეინერების განთავსება მხოლოდ სპეციალურ გადახურულ ადგილებში</p>					

	Allocation of fuel and lubricants containers at the special dedicated place (with roofing and concrete flooring)					
14	<p>სამშენებლო ტერიტორიაზე საყოფაცხოვრებო ნარჩენებისთვის თავსახურიანი კონტეინერის განთავსება და შესაბამისი წარწერებით აღჭურვა (მაგ. "HOUSEHOLD WASTE")</p> <p>Placement of proper Household Waste container at the special dedicated place with relevant indication signs (for example "Household Waste")</p>					
15	<p>სამშენებლო ტერიტორიაზე სახიფათო ნარჩენებისთვის თავსახურიანი კონტეინერის განთავსება და შესაბამისი წარწერებით აღჭურვა (მაგ. "HAZARDOUS WASTE")</p> <p>Placement of proper Hazardous Waste container at the special dedicated places with relevant indication signs (for example "Hazardous Waste")</p>					
16	<p>სამშენებლო ტერიტორიაზე ან მის გარეთ ტრანსპორტისთვის პარკირების ადგილის მოწყობა და ნიშნით აღჭურვა (მაგ. P)</p> <p>Arrangement of proper Parking area at the adequate place inside/outside of construction territory with relevant sign (for example P)</p>					
17	<p>სამშენებლო მასალების და ნარჩენების ტრანსპორტირების დროს ავტოტრანსპორტის სპეციალური საფარით (ბრეზენტით, ტენტითდასხვა) აღჭურვა</p> <p>Use tarpaulins cover during materials transportation</p>					
18	<p>საჭიროებიდან გამომდინარე მტვრის წარმოქმნის პრევენცია</p> <p>Dust generation prevention activities (when needed)</p>					
19	<p>მუშების და ინჟინერ-ტექნიკური პერსონალის მიერ ინდივიდუალური დაცვის საშუალებების (ჩაფხუტი, ჟილეტი, ხელთათმანი, ჩექმები, დამცავი სათვალე, და სხვა) სრულად გამოყენება</p> <p>Ensure that all workers are provided with and use appropriate Personal Protective Equipment - helmets, hand gloves, boots, masks, safety belts</p>					



20	<p>სიმაღლეზე მუშაობის დროს სპეციალური დამცავი აღჭურვილობის გამოყენება</p> <p>Use of special safety equipment during working at heights</p>					
21	<p>სამშენებლო ტერიტორიის მუდმივად დალაგება და დასუფთავება</p> <p>Regularly cleaning of construction territory</p>					
<p>ობიექტის გარემოს დაცვაზე პასუხისმგებელი პირი (კონტრაქტორი)/Staff responsible for environment/safety at the site (contractor)</p>		<p>სახელი:</p> <p><b>Name:</b></p>			<p>ხელმოწერა/</p> <p>Signature:</p>	
<p>მშენებლობის ინსპექტორი (ზედამხედველი)/Construction site inspector (supervisor)</p>		<p>სახელი:</p> <p><b>Name:</b></p>			<p>ხელმოწერა/</p> <p>Signature:</p>	
<p>გარემოს დაცვის სპეციალისტი (კონტრაქტორი)/Environmental Specialist (contractor)</p>		<p>სახელი:</p> <p><b>Name:</b></p>			<p>ხელმოწერა/</p> <p>Signature:</p>	

შენიშვნა/Comment:

შესაბამისი ფოტომასალა/Photo Materials:

## ANNEX H

### Letter of Permission issued by the Tbilisi City Hall for cutting down 9 pine trees

11/30/2016 192.168.1.11/nomfileserver/GetFile?file\_id=23671422989147684197&obj\_name=A&SessValue=KgJXw46nJGOJcKEYPOMjBdKizWUVXZBIMFM...



ქ. თბილისის მუნიციპალიტეტის  
მერიის ეკოლოგიისა და გამწვანების  
საქალაქო სამსახური



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საქართველოს გაერთიანებული წყალმომარაგების  
კომპანია,  
მის:ვაჟა-ფშაველას გამზ. #76 "გ"

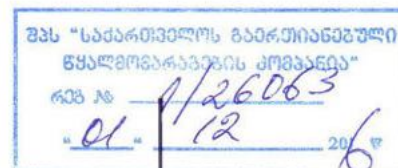
თქვენი 2016 წლის 14 ნოემბრის #407617/07 განცხადების თანახმად, სადაც ითხოვთ შპს „საქართველოს გაერთიანებული წყალმომარაგების კომპანიის“ კუთვნილ ტერიტორიაზე (უნივერსიტეტის ქუჩა საკ/კოდ 01.14.06.006.054) სათაო ოფისის მშენებლობის განხორციელების მიზნით 9 (ცხრა) ძირი წიწვოვანი (ელდარის ფიჭვი) ხის მოჭრის ნებართვას გაცნობებთ, რომ ქალაქ თბილისის მუნიციპალიტეტის მერიის ეკოლოგიისა და გამწვანების საქალაქო სამსახურმა ზოგადი აღმინისტრაციული კოდექსის 96-ე და 97-ე მუხლების მოთხოვნათა დაცვით შეისწავლა თქვენს მიერ წარმოდგენილი დოკუმენტაცია, რის შედეგადაც, საქართველოს კანონის „ქალაქ თბილისის საზღვრებში და მიმდებარე ტერიტორიაზე არსებული მწვანე ნარგავებისა და სახელმწიფო ტყის ფონდის განსაკუთრებული დაცვის შესახებ“ მე-2 თავის მე-6 მუხლის მე-6 პუნქტის „ბ“ ქვეპუნქტის, ქალაქ თბილისის მუნიციპალიტეტის მერიის არქიტექტურის სამსახურის #2456158 გადაწყვეტილების და ააიპ „საქართველოს ეროვნული ბოტანიკური ბაღი“ს მეცნიერ თანამშრომლის (გრიგოლ დეისაძე) 2016 წლის 21 მარტის საექსპერტო დასკვნის შესაბამისად მიღებული იქნა შემდეგი გადაწყვეტილება:

ა) მოიჭრას სამშენებლო ტერიტორიაზე განთავსებული 9 (ცხრა) ძირი ელდარის ფიჭვი დიამეტრებით: 22სმ, 21სმ, 18სმ, 25სმ, 23სმ, 29სმ, 18სმ, 32სმ, 12სმ, (წლოვანება: 2 ძირი-58 წლიური რგოლით, 5 ძირი-59 წლიური რგოლით, 2 ძირი-60 წლიური რგოლით), რომელთა აღდგენითი ღირებულება შეადგენს 53100 (ორმოცდაცამეტათასი) ლარს. მესაკუთრე ვალდებულია გადაიხადოს ხე-მცენარეების მოჭრის აღდგენითი ღირებულება ამავე კანონის მე-2 თავის მე-5 მუხლის შესაბამისად და ქ. თბილისის მერიის ეკოლოგიისა და გამწვანების საქალაქო სამსახურში წარმოადგინოს გადახდის ქვითარი (საბიუჯეტო შემოსავლების სახაზინო კოდი-#300773292 ზანკის კოდი-TRESGE22), რომლის შემდგომაც გაიცემა მოჭრის შესაბამისი ნებართვა.

ეკოლოგიისა და გამწვანების საქალაქო სამსახურის  
უფროსი

*ნ. სულხანიშვილი*

ნინო სულხანიშვილი



**Final Audit Report  
January 2017**

**GEORGIA: L2749: URBAN SERVICES IMPROVEMENT  
INVESTMENT PROGRAM (TRANCHE 1)**

**Construction of Water Supply Infrastructure in Anaklia,  
Kutaisi and Poti (REG-01)**

## ABBREVIATIONS

ADB	Asian Development Bank
CAP	Compensation Action Plan
DC	Design Consultant
UREP	Unit of Resettlement and Environmental Protection
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	Environmental Specialist
GoG	Government of Georgia
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IA	Implementing Agency
USIIP	Urban Sector Improvement Investment Program
IEE	Initial Environmental Examination
MoENRP	Ministry of Environment and Natural Resources Protection
MoRDI	Ministry of Regional Development & Infrastructure
UWSCG	United Water Supply Company of Georgia
WS	Water Supply

## TABLE OF CONTENTS

<b>PART I:</b>	<b>Introduction</b>	4
A	General information about the program/SUBPROJECTS	4
B	Improvement of Water Supply Infrastructure in Anaklia, Kutaisi and Poti (contract Reg-01)	4
<b>Part II</b>	<b>Project Organization and Environmental Management Team</b>	5
A	Agencies Involved in Investment Program Implementation	5
B	Relationships with Contractors, Owner, Lender, etc	7
<b>Part III</b>	<b>Environmental Audit Goals and Methodology</b>	8
A	Audit Goals and Objectives	8
B	Methodology	8
<b>PART IV</b>	<b>Final Environmental Audit Findings</b>	9
<b>4.1</b>	<b>Kutaisi water supply infrastructures (contract Reg-01)</b>	9
A	Project Description	9
B	Environmental Management Plans, Conducted Environmental Audits	10
C	Site Audit	11
C.1	Vazha Phshavela Reservoir	11
C.2	TV Tower Reservoir	12
C.3	Tetramitsa Reservoir	13
C.4	Kldiashvili Pumping Station	15
C.5	Kutaisi Network	16
<b>4.2</b>	<b>Anaklia water supply infrastructures (contract Reg-01)</b>	19
A	Project Description	19
B	Environmental Management Plans and Environmental Audits	19
C	Site Audit	19
<b>4.3</b>	<b>Poti water supply infrastructures (contract Reg-01)</b>	22
A	Project Description	22
B	Environmental Management Plans and Environmental Audits	23
C	Site Audit	23
<b>PART V</b>	<b>Conclusions and Recommendations</b>	26
<b>ANNEXES</b>		28
	<b>Annex 1: Vazha Phshavela Reservoir post-construction environmental audit checklist</b>	28
	<b>Annex 2: TV Tower Reservoir post-construction environmental audit checklist</b>	29
	<b>Annex 3: Tetramitsa Reservoir post-construction environmental audit checklist</b>	30
	<b>Annex 4: Kldiashvili Pumping Station post-construction environmental audit checklist</b>	31
	<b>Annex 5: Kutaisi Network post-construction environmental audit checklist</b>	32
	<b>Annex 6: Darcheli Reservoir post-construction environmental audit checklist</b>	33



## PART I: INTRODUCTION

### A. General information about the program/SUBPROJECTS

1. 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.

2. 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.

3. The Investment Program will improve the health of residents in secondary towns in Georgia. The outcome of the Investment Program is improved WSS services in these urban centers.

4. Tranche 1 of the Investment Program includes the following sub-projects:

- Construction of Mestia Headworks (MES-01)
- Construction of Water Supply Infrastructure in Anaklia, Kutaisi and Poti (REG-01)  
(REG-01)
- Construction of Mestia Water Treatment Plant and Reservoirs (REG-02)
- UWSCG Office Building
- Construction of the Water Supply Network in Ureki (Ure-01).

5. The presented final audit report covers only Improvement of Water Supply Infrastructure in Anaklia, Kutaisi and Poti (REG-01) subproject.

### B. Construction of Water Supply Infrastructure in Anaklia, Kutaisi and Poti (contract Reg-01)

6. The scope of works includes improvement of water supply infrastructure in Anaklia, Kutaisi and Poti, in particular, reservoirs and pumping stations, transmission lines and distribution lines of water supply systems as well as a water treatment plant in Poti for treating water from Grouli springs. The project envisages installation of water pipelines on 96 km. Concrete water reservoirs will be built on 5 places with total capacity of 35,000 m<sup>3</sup>. The project also covers construction of 4 pumping stations (with total capacity of 4,516 m<sup>3</sup>/hr) as well as construction of water treatment facility.

7. United Water Supply Company of Georgia under the Ministry of Regional Development and Infrastructure of Georgia signed a contract (#UWSCG/ICB/CW-2013-REG-01) with Spanish Cobra Instalaciones y Servicios. The Contract was made effective 19 September 2013.

## **Part II: Project Organization and Environmental Management Team**

### **A. Agencies Involved in Investment Program Implementation**

8. 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.

9. 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. An Investment Program Management Office (IPMO) which is the Strategic Planning and Donors Relations Department (the former name of the Donors Relations Department was changed in July 2016) is responsible for the implementation of all Investment Program related functions. Resettlement and Environmental Protection Unit (UREP) is part of this Department. The IPMO coordinates construction of subprojects under USIIP, and ensures consistency of approach and performance.

10. In December 2016 the name of IPMO was changed again and became an International Procurement and Donors Relations Department. A new Department of Environmental Protection, Resettlement and Permit (DEPRP) was established instead of UREP as well. DEPRP will include Unit of Construction Permission and will consist of five staff members. The new structural changes will enter into force from January 2017.

10. UWSCG as responsible IA for the project recruited a Supervision Consultant (SC). 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. 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.

11. All mitigation measures during construction have to be implemented by the contractor and these are monitored by the supervision consultant (SC). To ensure the smooth implementation of EMPs and SEMP of subprojects, an Environmental Management Specialist (EMS) is employed by the SC/EPTISA. SC/EMS conducts routine observations and surveys, prepares quarterly environmental reports and submits these to UWSCG.

12. The Contractor has the following obligations:

- to prepare SSEMPs;
- to employ Environmental Consultant responsible for developing and implementing the construction phase SSEMPs and for providing the corresponding information to UWSCG and SC;



- to develop Solid Waste Disposal Plan and agreed the MoENRP and Local Government

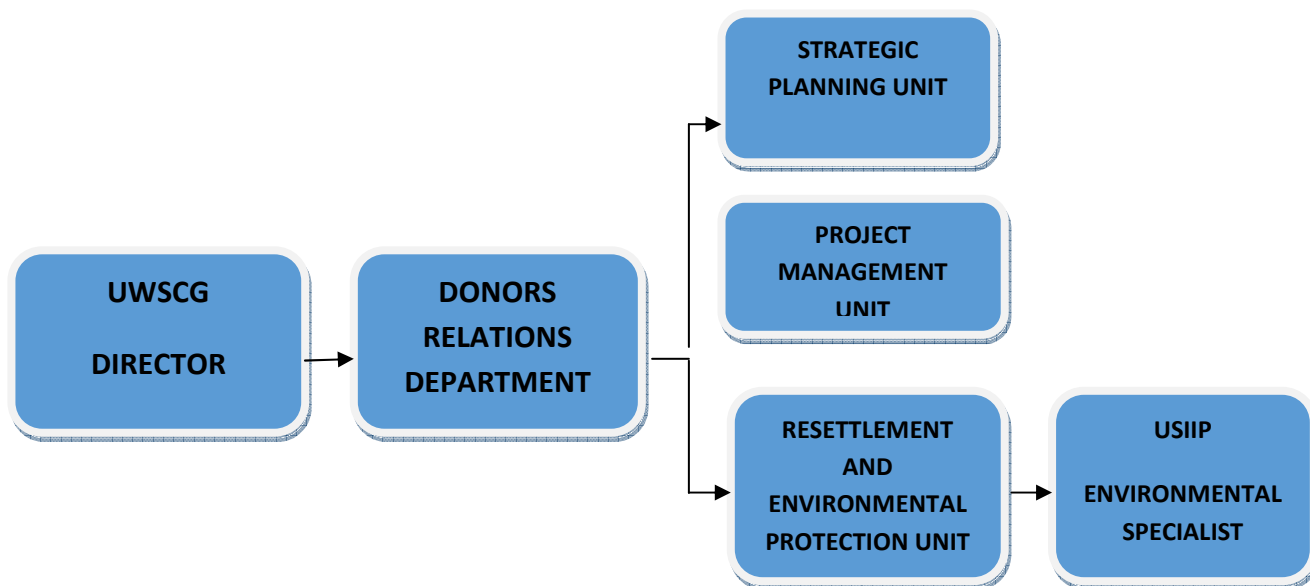
13. DC is responsible for developing and incorporation of mitigation measures in design and construction.

14. The environmental specialist (ES) is hired by UWSCG under the USIIP to assist and advise the Resettlement and Environmental Protection Unit (UREP) in USIIP program implementation in compliance with the ADB Safeguard Policy Statement 2009 and National Legislation, and oversee the work of DCs and SCs in safeguards compliance. ES supports UREP in EARF implementation, in particular, reviewing IEE/EIA Reports and overseeing implementation of EMP/SSEMPs and in training and capacity-building activities. The ES prepares bi-annual and annual environmental monitoring reports and submits to ADB.

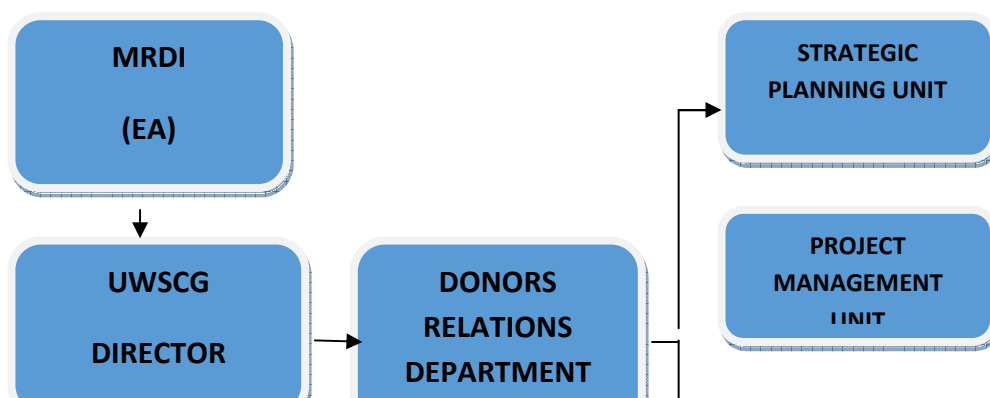
15. UREP is responsible for the implementation of mitigation and monitoring measures during construction and operation of subprojects under USIIP. Currently UREP is staffed with a Head of Division and one specialists, who is responsible for both resettlement and environmental issues.

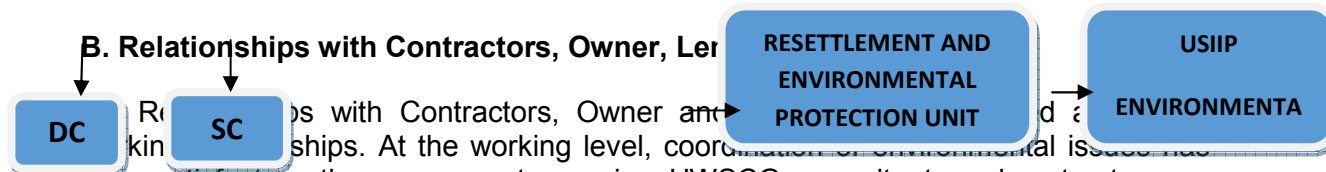
16. ADB is the donor financing the Investment Program Environmental management organization is shown in Figure 1 and Figure 2.

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



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





Relationships with Contractors, Owner and Lender. At the working level, coordination of environmental issues has been satisfactory, the government agencies, UWSCG, consultants and contractors are in frequent communication and consultation.

18. Ministry of Regional Development and Infrastructure (MoRDI) is the Executing Agency (EA) responsible for oversee progress and provide guidance on the Investment Program implementation; convene regular meetings in consultation with the SC and UWSCG; ensure compliance with Investment Program covenants.

19. Oversight of the USIIP with regards to environmental management is the responsibility of the environmental safeguards team, in particular UWSCG/UREP and the Environmental Specialist of USIIP.

20. The team has constant communication with the Supervision Consultant, Contractor, reviews/comments all environmental reports submitted by DC, SC and contractors.

21. In fact the SSEMPs for all projects has been approved by UWSCG/UREP after the numerous discussions with the contractor until the specific situations of the site as well as mitigation measures under the site specific management plans are reflected.

22. SC is responsible for environmental capacity building, monitoring of implementation of SEMP and for developing quarterly reports. The Contractor has a full time Environmental Specialist who carries out day to day monitoring and submits monthly progress reports.

23. ADB oversees project sites regularly and gives clear instructions for the project sites improvements with regard to environmental safeguards.

24. To resolve the observed environmental safeguard issues, the regular Environmental Meetings are organized with participation of UWSCG/IPMO/UREP, Eptisa and Contractors. During the meetings environmental issues and implementation of the mitigation measures are discussed.

25. A Grievance Redress Committee has been established within REG-01 in Kutaisi, Poti and Anaklia, to date all grievances have been dealt to the satisfaction of complainants.

26. Contractor of REG-01 package operated during the reporting period with the following subcontractors:

- Comremi Ltd
- “New M”, Ltd

27. Below is the list of subcontractors of “Cobra” under the Reg-01 project:

- “Solid Waste Management Company of Georgia” – contract was signed for disposal of Municipal Waste from Kutaisi, Poti and Anaklia construction sites;
- “Solid Waste Management Company of Georgia” – contract was signed for disposal of Solid Waste from Kutaisi, Poti and Anaklia construction sites;
- License issued to Ltd Peri by the MoENRP for mineral extraction (gravel, ballast) on the basis of the purchase agreement signed between the Ltd “Peri” and Ltd “Anagi”.

### **Part III: Environmental Audit Goals and Methodology**

#### **A. Audit Goals and Objectives**

28. This Final Audit Report is being prepared to comply with the 2009 ADB’s SPS and Georgian legislation, including Safeguards Requirement and aims to identify past and present concerns from the production and business activities of Project Company that related to impacts on environment. The specific objectives of the audit can be summarized as follows:

- a. Determine and verify whether all environmental requirements, criteria and constraints, prescribed in IEE, SSEMP and the Concessionaire’s Environmental Policy have been adhered to during the construction phase.
- b. Determine and verify whether the mitigation actions and rehabilitation requirements contained in the SSEMP have been appropriate and successful to prevent or control environmental pollution and/or damage.
- c. Ensure that an appropriate environmental monitoring and control program exists to follow up on mitigation and rehabilitation works completed during the construction phase.
- d. Ensure that appropriate environmental monitoring and control program exists for monitoring of all environmental aspects during the operational phase.
- e. To identify any shortcomings in the SSEMP and EMS system implemented during the construction phase and to recommend alterations to the EMS applicable to the operational phase.

#### **B. Methodology**

29. The compliance environmental audit of Kutaisi, Anaklia and Poti Water Supply Project was done in several stages:

30. At stage one so called desk-top audit was conducted and the available materials were studied. The following documents were studied and analyzed at the given stage:

- Initial Environmental Examination (IEE) for the subprojects;
- Updated SSEMPs;
- Bi-Annual Environmental Monitoring Reports drafted by the United Water Supply Company of Georgia (UWSCG)
- Quarterly Environmental Reports developed by the Supervision Consultant (Eptisa);
- Records of Environmental Monitoring conducted by the Supervision Consultant and UWSCG;
- Findings of ADB mission revealed on 20-22 of April 2016.

31. At stage two, the meetings with the Project participants with different degrees of responsibility for meeting the environmental requirements and monitoring were held. The meetings were organized with the following environmentalists:

- Irakli Legashvili – Environmental Specialist, Supervision Consultant - Eptisa
- Ketevan Chomakhidze – Environmental Consultant, United Water Supply Company of Georgia under USIIP

32. Further, a meeting was held with the Poti, Kutaisi and Anaklia residents who live along the project line.

33. At stage three, visit to the site and collection of evidences was accomplished.

## **PART IV: Final Environmental Audit Findings**

### **4.1 Kutaisi water supply infrastructures (contract Reg-01)**

#### **A. Project Description**

34. Kutaisi, the capital of Imereti region, is the second largest Georgian city and the political, economic, and cultural centre of Imereti region. Imereti region, with a total area of 6,515.8 km<sup>2</sup>, is strategically located on the main East-West transit corridor between the Caspian and the Black Seas. It is the most populated region in Georgia, with more than 702,700 inhabitants (based on 2002 data). It consists of 12 administrative-territorial units –the city of Kutaisi and eleven districts (Baghdati, Vani, Zestaphoni, Terjola, Samtredia, Tkibuli, Kharagauli, Khoni, Tskaltubo, and Chiatura). Kutaisi, which is about 240 km to the west from the capital City of Tbilisi, lies at the River Rioni, the main river in western Georgia draining to the Black Sea.

35. The service levels of water supply are low with partial coverage, high system losses, and poor water quality at consumer end. With the government initiative to develop Kutaisi, the water demand is likely to grow slightly. This subproject will expand the system and improve the service standards, with a daily supply of potable water in adequate quantity (205 lpcd). The subproject is designed to meet the projected demand of 2040. This will be achieved by: (i) restructuring of water supply network if required (ii) exchange / reconstruction of old transmission pipes (iii) and construction of three new reservoirs.

36. The Kutaisi WS system improvement project is relatively large in scale and maintenance as compared to other project towns. None of the components will encroach into this reserve and most of the activities are planned along the existing roads. Disturbances are limited to construction period. The identified impacts are mostly short-term, localized and can either be easily avoided or mitigated.

37. The Kutaisi WS improvement project has been classified as environmental assessment category B (some negative impacts but less significant than category A). According to ADB procedures, the impacts of the subproject were assessed by the Initial Environmental Examination, conducted according to ADB Safeguard Policy Statement (2009).

38. The proposed water supply infrastructure improvement works have been elaborated based on the development goals identified in the Feasibility Study.

The following measures are implemented:

- To overcome deficiencies in supply, network is restructured where necessary.
- Old pipes that need replacement are exchanged by new ones.
- Three new reservoirs: “Tetra Mitsa”, “ TV Tower “ and new “VazhaPshavela” are constructed
- Rehabilitation of pumping stations in Vazha Pzavela and Kldiashvili conducted

## **B. Environmental Management Plans, Conducted Environmental Audits**

39. All environmental management plans requested under the IEE have been prepared by the Contractor and approved by the PIU-UWSCG. Within the scope of the project Contractor prepared SSEMPs and Waste Management Plan.

40. Contractor “Cobra” has developed the Compensation Action Plan (CAP) for planting vegetation/trees of the same species for the compensation of the removed red book listed trees at Tetramitsa reservoir and for the damage done to the biodiversity of Georgia. Before the removal of trees the Government of Georgia has issued an Ordinance N1147 “About removal of wooden plants included in the red data list from natural environment” (26th July of 2014). At the same time the MoENRP and its National Forestry Agency has identified a suiting place for planting the trees.

41. CAP was agreed with the MoENRP of Georgia in November 2015. Based on this CAP Contractor “Cobra” planted 50 individuals of Imeretian Oak trees (10 instead of each cut tree) and takes responsibility for taking care of saplings of the same species in suiting environment offered by the National Forestry Agency of MoENRP during the five years (Figures 1 and 2).

### **Figures 1 and 2: 50 planted seedlings of Imeretian Oak trees**



42. Environmental Measurements were carried out by the contractor at various locations of construction sites (reservoirs, pumping stations, network). The last environmental measurements were conducted in Kutaisi in June 2016. This sites include: (i) Kutaisi, Tetramitsa Reservoir; (ii) Kutaisi, Vazha-Pshavela Str. 84; (iii) Kutaisi TV Tower; and (iv) networks.

43. Environmental team involved in the project implementation process has performed permanent environmental audits in the project zone. During January-June 2016 reporting period site inspections and audits have been carried out on: 22 February, 26-28 February, 9-11 March, 12-13 April and 20-22 April and 7-8 June of 2016.

44. During the above-mentioned inspections and audits 13 non-compliances have been revealed out of which 12 non-compliances were corrected till 30<sup>th</sup> of July 2016.

45. Besides, 3 non-compliances were revealed by the ADB CSR Mission conducted on 21-22 April 2016. The mentioned non-compliances were corrected till 30<sup>th</sup> of July 2016.

### **C. Site Audit**

46. Within the scope of Kutaisi Water Supply Infrastructure Subproject final environmental audit was conducted on 20<sup>th</sup> of December 2016. The final audit was performed for all construction sites listed in P.37.



### **C.1 Vazha-Phshavela Reservoir**

47. The construction site is located in the vicinity of Vaja-Pshavela Street. During the final audit process non-compliances have not been revealed. Filled in Post-Construction Environmental Checklist is presented in the Annex 1.

48. The construction site is fully fenced (Figures 3 and 4).

**Figures 3 and 4: Fencing of Vaja-Pshavela Reservoir construction Site**



49. All kinds of waste are totally removed from the site and all temporary facilities are also removed. The local roads are laid and the area is improved (Figures 5 and 6).

**Figures 5 and 6: Reservoir site in Vazha-Pshavela Street**





50. The reconstruction works are accomplished fully and satisfactorily in the area (Figures 7 and 8). The access road to the reservoir is also coated.

**Figures 7 and 8: Reinstated Construction Site**



## **C.2 TV Tower Reservoir**

51. During the final audit process non-compliances at the construction site of TV Tower have not been revealed. The construction site is fully fenced (Figures 9 and 10). Filled in post-construction environmental checklist is attached in Annex 2.

**Figures 9 and 10: Installed fencing around the TV Tower Construction Site**



52. The reconstruction works are accomplished satisfactorily (Figures 11 and 12); all kinds of waste, including construction waste are removed from the site. The demolition of the auxiliary buildings and premises is complete.

**Figures 11 and 12: Returning of topsoil and reinstatement of vegetation cover**



53. The local roads of the reservoir site are faced and the access road to the reservoir is also rehabilitated.

### **C.3 Tetramitsa Reservoir**

54. During the final audit process non-compliances at the construction site of Tetramitsa Reservoir have not been revealed. The construction site is fully fenced (Figures 13 and 14). Filled in post-construction environmental checklist is attached in Annex 3.

**Figures 13 and 14: Tetramitsa Reservoir Fencing**



55. The local roads on the reservoir site are faced (Figure 15) and the the access road to the reservoir is also restored (Figures 16). All types of waste are totally removed from the project zone. The temporary buildings and premises are demolished and the waste is removed from the site.

**Fig. 15. Local roads**

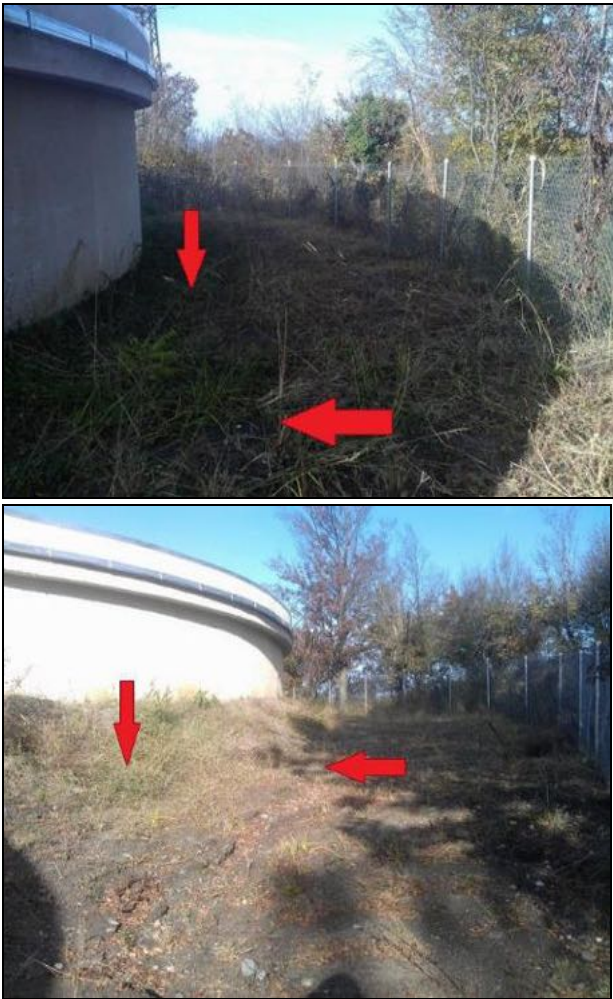
**Fig.16 Access Road of Reservoir**





56. Reinstatement of post-construction territory is satisfactory (Figures 17 and 18).

**Figures 17 and 18: Returning of top soil and reinstatement of vegetation cover at Tetramitsa construction site**



#### **C.4 Kldiashvili Pumping Station**

57. During the final audit process non-compliances at the construction site of Kldiashvili Pumping Station have not been revealed. The construction site is fully fenced (Figures 17 and 18). Filled in post-construction environmental checklist is attached in Annex 4.

**Figures 17 and 18: Kldiashvili Pumping Station fencing**





58. The waste is removed from the site and both, local access roads and the access road to the reservoir are faced (Figures 19 and 20).

**Figure 19: Local roads      Figure 20: Access Road**



59. The only non-compliance fixed in 2016 by UWSCG/IPMO/UREP, Eptisa and Contractor –was high noise level: „Noise emission of the Pumping Station is obviously high and NOT acceptable and exceed standards“.

60. In order to eliminate the above-said non-compliance, the Contractor developed the following corrective actions:

- Changed the existing 6 mm steel door for an acoustic door, with a level of noise isolation of at least 40 dB;
- Changed the ventilation window to the roof, so that the noise of this hole is not focused directly to the surrounding houses’
- Covered the walls with noise absorbent panels, noise absorption coefficient more than 0,8 for 1.000 Hz.

61. At the stage of the audit, all the corrective actions were complete, and as it became clear during the conversation with the local people, the noise level declined a lot. As the contract with the independent Consultant hired by “Eptiza” Ltd, did not envisage any measures to identify the noise level on the given site, within the scope of the audit it was impossible to obtain any proof of the non-compliance having been fully eliminated as a result of the undertaken corrective actions.

62. **Recommendation:** The noise measurements at the nearest residential houses are necessary in the near future to obtain the proofs to evaluate the status of the elimination of the identified non-compliance. If the noise level does not comply with the

legislative requirements, additional corrective actions are to be developed to eliminate this non-compliance.

### **C.5 Kutaisi Network**

63. The rehabilitation works on the whole territory of the city, where the existing water supply pipes were changed or new pipes were laid, were accomplished satisfactorily. Figures 21 to 30 show the visual proof of the rehabilitation works accomplished in different streets of the city.

**Figures 21 and 22: Reinstatement of May 26 Street with installed network**



**Figures 23 and 24: Reinstatement of Tsereteli 1-st turn with installed network**



**Figures 25 and 26: Reinstatement of Gelati Street with installed network**





**Figures 27 and 28: Reinstatement of Kldiashvili Street with installed network**



**Figures 29 and 30: Reinstatement of Solomon I Street with installed network**



#### 4.2 Anaklia Water Supply Infrastructures (Contract Reg-01)

## **A. Project Description**

64. Design and construction of a new water supply system will focus on the following installations: transmission lines and new reservoir to the North-East of Anaklia.

65. The project area extends from Zugdidi to Anaklia and Ganmukhuri on the Black Sea Coast. The entire area is in the Enguri River Basin; the topography varies from hilly to flat towards the coast. Owing to its varied physical and geographic conditions, the vegetation in the project area is rich, diverse and consists of foothill forests and Kolketi low lands.

66. This subproject is located in Anaklia Town in Zugdidi District in western part of Georgia. Anaklia is situated about 30 km west of Zugdidi and about 480 km west of Tbilisi.

67. The subproject includes the works comprising transmission lines and the construction of a new reservoir. The proposed infrastructure improvement works are located east of Anaklia. The main component is construction of new reservoir.

68. A new reservoir is constructed to fit the new requirements. Water will be conveyed from the well fields to the new reservoir and from new reservoir to Anaklia by means of transmission pipes.

## **B. Environmental Management Plans and Environmental Audits**

69. All environmental management plans requested under the IEE have been prepared by the Contractor and approved by the PIU-UWSCG. In the scope of the project Contractor prepared also SSEMP and Waste Management Plan.

70. The Environmental Measurements were carried out by the contractor at various locations of construction sites (reservoirs, pumping stations, network). The last environmental measurements were conducted in Anaklia in July 2015. These sites include: (i) Anaklia Darcheli Reservoir; and (ii) Anaklia, Vil. Darcheli.

71. Environmental team involved in the project implementation process has performed permanent environmental audits in the project zone. During *January-June 2016 reporting period* site inspections and audits during the reporting period have been carried out on: 6 February 2015, 17-18 March 2015, 8 and 27 April 2015, 5-8 May 2015.

72. During the above-mentioned inspections and audits 2 non-compliances have been revealed, both non-compliances were corrected till 30<sup>th</sup> of July 2016. Both non-compliances were identified with the quality of the rehabilitation works accomplished on the site of Darcheli reservoir under the relevant plan.

73. During 20-22 April 2016 environmental audit was conducted by the ADB Mission. It should be mentioned that non-compliances have not been revealed under Anaklia Darcheli Reservoir construction subproject during the mission.

## **C. Site Audit**

74. Darcheli reservoir is fenced with metal fence and has gates (Figures 31 and 32). Post-construction territory and access road are reinstated and is satisfactory (Figures 33 and 34).

**Figures 31 and 32: Darcheli reservoir fencing with gates**



75. The construction waste is removed from the reservoir site. The local roads are faced with concrete and the rehabilitation works in the area are accomplished satisfactorily (Figures 33 and 34).

**Figures 33: local roads**

**Figures 34: Reinstated site**



**76. Non-compliance 1:** Scrap metal and wooden waste is scattered in an uncontrolled manner on the site of Darcheli reservoir (Figures 35 and 36).

**77. Corrective action:** The scrap metal and wooden waste scattered in an uncontrolled manner on the site of Darcheli sub-station must be removed from the site by the Contractor. The deadline of this work is 1 month.

**Fig. 35 and 36: Scrap metal and wooden waste at the Darcheli reservoir territory**





**78. Non-compliance 2:** The generator unit on the territory of Darcheli sub-station running on diesel is not placed on a secondary tank. In case of diesel spill, there is a danger of the soil and underground waters pollution (Figures 37 and 38).

**79. Corrective action:** The generator must be placed on the secondary tank. The volume of the secondary tank must be at least 110% of the generator diesel capacity.

**Figures 37 and 38: The generator on the site**



**80. Non-compliance 3:** As the security staff stated, there is no an office for the security staff on the territory of Darcheli reservoir where they can overnight or have a rest. Consequently, they have to overnight and rest in their own car.

**81. Corrective action:** At the initial stage, a temporary container is absolutely necessary to install on the territory of Darcheli reservoir with the permanent building to be designed and constructed consequently, in 6 months' time.

### 4.3 Poti Water Supply Infrastructures (Contract Reg-01)

#### A. Project Description

82. The City of Poti is located at the Black Sea and lies some 310 km to the west from the capital city of Tbilisi. The service levels of water supply are low with partial coverage, high system losses, and poor water quality at consumer end. Rehabilitation of the water supply network is currently in progress under another project.

83. The water demand is likely to grow significantly as population will grow. This subproject will expand the system and improve the service standards, with a daily supply of potable water in adequate quantity (214 lpcd - total specific water demand in 2020). The subproject is designed to meet the projected demand of 2040.

84. This will be achieved by:

- Rehabilitation of infrastructure to tap water from Nosiri well field;
- Rehabilitation / construction of transmission pipes
- Construction of a water treatment plant for treating water from Grouli springs, and
- Rehabilitation of Nabada water reservoir. These improvements will benefit Poti Town and villages in the urban periphery.

85. The City of Poti is the most developed part of the Samegrelo – Zemo Svaneti region of Georgia. To the west it borders the Black Sea; to the north the tributary of the rivers Rioni and Khobi and to the southeast the river Kapartchina and Paliastomi Lake. Poti has a highest altitude of less than 5 m. It covers an area of approximately 59 km<sup>2</sup> and is administratively divided into four municipalities: Centre, Nabada, Island, and Maltakva. It has a population of about 48,000 inhabitants and is one of the main populated centres in Georgia. The present rate of population increase is estimated at 1.15 %. The increase is caused by the growing importance of the Poti seaport as a transshipment centre.

86. The subproject activities are partly located in the town and surrounding suburbs. The drinking water intake is located at Nosiri about 42 km northeast of Poti. It is proposed to convey water from existing Nosiri well field. The water is pumped at a level of 29 masl and conveyed to Nabada reservoirs and to villages by gravity or by pumping via two transmission mains.

87. Reservoirs are constructed within the premises of the Nabada water supply. This work involve excavation for foundations, placing of reinforcement rods in wooden shutters and pouring of concrete in voids to form foundations, floor, walls and roof. Cement mortar plaster applied to walls (outside and inside), floor and roof for smooth finish. Inlet and outlet pipes and fixers/valves are installed. Excavation for foundation is done by backhoe digger or manually, where required. Concrete is mixed in concrete mixer and needle (pen) vibrator will be used for compaction of concrete around the reinforcement. The quantity waste/surplus soil generated from this activity is insignificant and can be used within the site to level the ground surface.

88. Main activities include reconstruction of Nabada reservoirs and pumping station for storage of water. Totally Construction of 5 reservoirs, 3,150 m<sup>3</sup> each that is located on Existing Nabada water supply area.

89. Reconstruction of Nabada pumping station for Distribution of water within the water supply System. From the Nabada reservoir water is supplied to the city system via a pumping station located on the Existing Nabada water supply area.

## **B. Environmental Management Plans and Environmental Audits**

90. All environmental management plans requested under the IEE have been prepared by the Contractor and approved by the PIU-UWSCG. Within the scope of the project Contractor also prepared SSEMP and Waste Management Plan.

91. The Environmental Measurements were carried out by the contractor at various locations of construction sites (reservoirs, pumping stations, network). The last environmental measurements were conducted in Poti in June 2016. These sites include: (i) Poti, territory near water Supply; (iii) Poti, vil. Nosiri;

92. Environmental team involved in the project implementation process has performed permanent environmental audits in the project zone. During January-June 2016 reporting period site inspections and audits have been carried out on: 22 February, 26-28 February, 9-11 March, 12-13 April and 20-22 April and 7-8 June of 2016.

93. During the above-mentioned inspections and audits 6 non-compliances have been revealed out of which 3 non-compliances were corrected fully till 30<sup>th</sup> of July 2016 and 3 non-compliances were corrected partially.

94. In addition, on April 21-22 of 2016, an environmental audit was accomplished by the Asian Development Bank mission and identified three non-compliances. Out of these non-compliances, by July 30, 2016, two non-compliances were fully corrected with the third non-compliance corrected partially.

## **C. Site Audit**

95. Within the scope of Poti Water Supply Rehabilitation Project an environmental audit was accomplished on December 21, 2016. The audit was done on the site of Nabada reservoir.

**96. Non-compliance 1:** The site of Nabada reservoir is fenced, but it has no gate (Figures 39 and 40) making it possible for the animals to move around the reservoir site (across the sanitary zone).

**Figures 39 and 40: The site of Nabada reservoir has not gates**



97. As already mentioned, across the site of the reservoir, which is a sanitary zone, animals move freely (Figures 41 and 42). As the said reservoir occupies quite a large area, as the local employees told us, driving the animals penetrating the area out of the territory is quite problematic.

**Figures 41 and 42: Animals on the reservoir site**





**98. Corrective action:** At the initial stage, it is necessary to install a temporary gate, or a 24-hour security service is to be introduced at the entrance to the area where the gate is to be installed later, in order to avoid the penetration of animals to the site. At the second stage, a permanent gate must be installed as it is envisaged by the project.

**99. Non-compliance 2:** The project envisaged the disassembly of the existing reservoir on the territory of Nabada and removal of the construction waste from the area. At present, only the upper ground layer of the existing reservoirs is removed, while the underground part of the reservoir is untouched. As it rains, the rainwater is accumulated on the site resulting in two basin-like units on the site of the reservoir (Figures 43 and 44).

**Figures 43 and 44: Water-flooded site of the existing reservoirs**



**100. Corrective action:** The old reservoirs on the territory must be totally disassembled and the construction materials must be removed and disposed as per the legislative requirements.

**101. Non-compliance 3:** The site of the reservoir is not leveled and in case of abundant precipitations, large part of the reservoir area is flooded increasing the risk of pollution of the underground waters (Figures 45 and 45).

**Figures 45 and 46: Water-flooded site of the reservoirs**



**102. Corrective action:** The site of the reservoir is to be leveled.

**103. Non-compliance 4:** The sewage pumping system on the site of Nabada reservoir is not complete contributing to the increased risk of pollution of underground waters (Figures 47 and 48).

**Figures 47 and 48: The sewage pump on the site of Nabada reservoir**



**104. Corrective action:** The installation and exploitation of the sewage pumping unit is to be accomplished.

105. As the audit demonstrated, a number of actions on the site of Nabada reservoir envisaged by the project are not complete by the Construction Contractor. Consequently, a certain proportion of the construction equipment of the Construction Contractor is still found on the territory of the reservoirs (Figures 49 and 50). The said construction equipment must be removed from the area following the accomplishment of the corrective actions.

**Figures 49 and 50: Equipment, machinery and temporary facilities of Contractor**





## Part V. Conclusions and Recommendations

105. Required mitigation measures such as: Site territory fenced fully (except of Nabada reservoir site); topsoil placed at original location; vegetation cover reinstated;; hazardous waste removed and disposed properly; post-construction territory reinstated to pre-construction or better conditions (except of Nabada Reservoir site) are implemented satisfactorily for all sites.

106. **All partially/not satisfactorily implemented mitigation measures should be corrected until the end of Defects Notification Period by the Contractor** (see Table 1 below).

**Table 1: Schedule of mitigation measures to be implemented by the contractor**

Construction Site	Noncompliance	Corrective Action	Time
Darcheli Reservoir Site	Scrap metal and wooden waste is scattered in an uncontrolled manner on the site of Darcheli reservoir	The scrap metal and wooden waste scattered in an uncontrolled manner on the site of Darcheli reservoir must be removed from the site by the Contractor	1 month



Darcheli Reservoir Site	The generator unit on the territory of Darcheli sub-station running on diesel is not placed on a secondary tank. In case of diesel spill, there is a danger of the soil and underground waters pollution	The generator must be placed on the secondary tank. The volume of the secondary tank must be at least 110% of the generator diesel capacity.	4 month
	As the security staff stated, there is no an office for the security staff on the territory of Darcheli reservoir where they can overnight or have a rest. Consequently, they have to overnight and rest in their own car.	At the initial stage, a temporary container is absolutely necessary to install on the territory of Darcheli reservoir with the permanent building to be designed and constructed consequently	6 month
Nabada Reservoir Site	The site of Nabada reservoir is fenced, but it has no gate making it possible for the animals to move around the reservoir site	At the initial stage, it is necessary to install a temporary gate, or a 24-hour security service is to be introduced at the entrance to the area where the gate is to be installed later, in order to avoid the penetration of animals to the site. At the second stage, a permanent gate must be installed as it is envisaged by the project.	6 month
Nabada Reservoir Site	The project envisaged the disassembly of the existing reservoir on the territory of Nabada and removal of the construction waste from the area. At present, only the upper ground layer of the existing reservoirs is removed, while the underground part of the reservoir is untouched. As it rains, the rainwater is accumulated on the site resulting in two basin-like units on the site of the reservoir	The old reservoirs on the territory must be totally disassembled and the construction materials must be removed and disposed as per the legislative requirements.	6 month
Nabada Reservoir Site	The site of the reservoir is not leveled and in case of abundant precipitations, large part of the reservoir area is flooded increasing the risk of pollution of the underground waters	The sewage pumping system on the site of Nabada reservoir is not complete contributing to the increased risk of pollution of underground waters	6 month
Nabada Reservoir Site	The sewage pumping system on the site of Nabada reservoir is not complete contributing to the increased risk of pollution of underground waters	The installation and exploitation of the sewage pumping unit is to be accomplished.	6 month



## ANNEXES

### Annex 1: Vazha-Phshavela Reservoir Post-Construction Environmental Audit Checklist

Required mitigation measures of environmental impact	Measures implemented				Comment
	yes	partially	no	N/A	
Site territory fenced fully	x				The reservoir site is totally fenced with a metal mesh.
Topsoil placed at original location	x				The topsoil is returned to its original location, where it was removed earlier in line with the legislative requirements.
Vegetation cover reinstated	x				The reinstatement works are accomplished satisfactorily.
Trees replanted as needed				x	No trees were cut down on the reservoir site under the project.
Construction waste and surplus/waste soil removed completely and disposed properly	x				The construction waste is totally removed from the reservoir site.
Hazardous waste removed and disposed properly	x				The hazardous waste is totally removed from the reservoir site.
Fuels and lubricants spills eliminated				x	There are no fuel or lubricant storage areas in the project zone.
Contractor equipment and machinery removed	X				The construction equipment and machinery is totally removed by the Contractor.
All temporary facilities removed and cleaned up	x				All temporary facilities are disassembled and removed from the site.
Streets with installed network reinstated to pre-construction or better conditions				x	Vazha-Pshavela reservoir sub-project has not affected the streets.
Post-Construction territory reinstated to pre-construction or better conditions	x				The site is fully and satisfactorily reinstated.

## Annex 2: TV Tower Reservoir post-construction environmental audit checklist

Required mitigation measures of environment impact	Measures implemented				Comment
	yes	partially	no	N/A	
Site territory fenced fully	x				The reservoir site is totally fenced with a metal mesh.
Topsoil placed at original location	x				The topsoil is returned to its original location, where it was removed earlier in line with the legislative requirements.
Vegetation cover reinstated	x				The reinstatement works are accomplished satisfactorily.
Trees replanted as needed				x	No trees were cut down on the reservoir site under the project.
Construction waste and surplus/waste soil removed completely and disposed properly	x				The construction waste is totally removed from the reservoir site.
Hazardous waste removed and disposed properly	x				The hazardous waste is totally removed from the reservoir site.
Fuels and lubricants spills eliminated				x	There are no fuel or lubricant storage areas in the project zone.
Contractor equipment and machinery removed	X				The construction equipment and machinery is totally removed by the Contractor.
All temporary facilities removed and cleaned up	x				All temporary facilities are disassembled and removed from the site.
Streets with installed network reinstated to pre-construction or better conditions				x	TW Tower reservoir sub-project has not affected the streets.
Post-Construction territory reinstated to pre-construction or better conditions	x				The site is fully and satisfactorily reinstated.

### Annex 3: Tetramitsa Reservoir Post-Construction Environmental Audit Checklist

Required mitigation measures of environmental impact	Measures implemented				Comment
	yes	partially	no	N/A	
Site territory fenced fully	x				The reservoir site is totally fenced with a metal mesh.
Topsoil placed at original location	x				The topsoil is returned to its original location, where it was removed earlier in line with the legislative requirements.
Vegetation cover reinstated	x				The reinstatement works are accomplished satisfactorily.
Trees replanted as needed	x				Trees were planted as a compensation of felled trees
Construction waste and surplus/waste soil removed completely and disposed properly	x				The construction waste is totally removed from the reservoir site.
Hazardous waste removed and disposed properly	x				The hazardous waste is totally removed from the reservoir site.
Fuels and lubricants spills eliminated				x	There are no fuel or lubricant storage areas in the project zone.
Contractor equipment and machinery removed	X				The construction equipment and machinery is totally removed by the Contractor.
All temporary facilities removed and cleaned up	x				All temporary facilities are disassembled and removed from the site.
Streets with installed network reinstated to pre-construction or better conditions				x	Tetramitsa reservoir sub-project has not affected the streets.
Post-Construction territory reinstated to pre-construction or better conditions	x				The site is fully and satisfactorily reinstated.



**Annex 4: Lkdiashvili Pumping Station post-construction environmental audit checklist**

Required mitigation measures of environment impact	Measures implemented				Comment
	yes	partially	no	N/A	
Site territory fenced fully	x				The reservoir site is totally fenced with a metal mesh.
Topsoil placed at original location	x				The topsoil is returned to its original location, where it was removed earlier in line with the legislative requirements.
Vegetation cover reinstated	x				The reinstatement works are accomplished satisfactorily.
Trees replanted as needed				x	No trees were cut down on the reservoir site under the project.
Construction waste and surplus/waste soil removed completely and disposed properly	x				The construction waste is totally removed from the reservoir site.
Hazardous waste removed and disposed properly	x				The hazardous waste is totally removed from the reservoir site.
Fuels and lubricants spills eliminated				x	There are no fuel or lubricant storage areas in the project zone.
Contractor equipment and machinery removed	x				The construction equipment and machinery is totally removed by the Contractor.
All temporary facilities removed and cleaned up	x				All temporary facilities are disassembled and removed from the site.
Streets with installed network reinstated to pre-construction or better conditions				x	Khidasheli reservoir sub-project has not affected the streets.
Post-Construction territory reinstated to pre-construction or better conditions	x				The site is fully and satisfactorily reinstated.

## Annex 5: Kutaisi Network Post-Construction Environmental Audit Checklist

Required mitigation measures of environment impact	Measures implemented				Comment
	yes	partially	no	N/A	
Site territory fenced fully				<b>x</b>	
Topsoil placed at original location				<b>x</b>	
Vegetation cover reinstated				<b>x</b>	
Trees replanted as needed				<b>x</b>	
Construction waste and surplus/waste soil removed completely and disposed properly	<b>x</b>				No waste is found adjacent to the project zone.
Hazardous waste removed and disposed properly	<b>x</b>				All types of waste are totally removed.
Fuels and lubricants spills eliminated				<b>x</b>	
Contractor equipment and machinery removed	<b>x</b>				The Contractor has totally removed the techniques from the project zone.
All temporary facilities removed and cleaned up				<b>x</b>	
Streets with installed network reinstated to pre-construction or better conditions	<b>x</b>				The site is fully and satisfactorily reinstated.
Post-Construction territory reinstated to pre-construction or better conditions	<b>x</b>				The site is fully and satisfactorily reinstated.

## Annex 6: Darcheli Reservoir Post-Construction Environmental Audit Checklist

Required mitigation measures of environmental impact	Measures implemented				Comment
	yes	partially	no	N/A	
Site territory fenced fully	x				Darcheli reservoir site is totally fenced.
Topsoil placed at original location	x				The topsoil is returned to its original location.
Vegetation cover reinstated	x				The reinstatement works are accomplished fully and satisfactorily.
Trees replanted as needed				x	No trees were cut down within the scope of the project.
Construction waste and surplus/waste soil removed completely and disposed properly		x			The construction waste is totally removed from the project zone; however, the metal waste is still scattered uncontrolled in the project zone.
Hazardous waste removed and disposed properly	x				The hazardous waste is totally removed from the project zone.
Fuels and lubricants spills eliminated			x		There is a generator unit found in the project zone, which is an alternative power source running on diesel. It is not placed on a secondary tank and in case of diesel spill the adjacent area will be polluted.
Contractor equipment and machinery removed	x				The construction equipment and machinery is totally removed by the Contractor.
All temporary facilities removed and cleaned up	x				All temporary facilities are disassembled and removed from the site.
Streets with installed network reinstated to pre-construction or better conditions				x	Darcheli reservoir sub-project has not affected the streets.
Post-Construction territory reinstated to pre-construction or better conditions	x				The project zone is reinstated satisfactorily.

## Annex 7: Poti Reservoir Post-Construction Environmental Audit Checklist

Required mitigation measures of environmental impact	Measures implemented				Comment
	yes	partially	no	N/A	
Site territory fenced fully		x			Poti reservoir is totally fenced, but no gate is installed allowing the domestic animals to penetrate the reservoir site.
Topsoil placed at original location		x			The topsoil is returned to its original location, but the ground works on the reservoir site are not complete yet.
Vegetation cover reinstated		x			The reinstatement works are accomplished on the most part of the territory, but they are not complete yet.
Trees replanted as needed				x	No trees were cut down within the scope of the project.
Construction waste and surplus/waste soil removed completely and disposed properly		x			The construction waste is totally removed from the project site. However, the existing infrastructure is not totally demolished and additional construction waste is expected to originate.
Hazardous waste removed and disposed properly	x				The hazardous waste is totally removed from the project site.
Fuels and lubricants spills eliminated			x		There are no fuel or lubricant storage areas in the project zone.
Contractor equipment and machinery removed			x		The construction equipment is not removed by the Contractor.
All temporary facilities removed and cleaned up			x		The temporary auxiliary buildings are not fully removed from the site.
Streets with installed network reinstated to pre-construction or better conditions				x	Poti reservoirs sub-project has not affected the streets

Post-Construction territory reinstated to pre-construction or better conditions		<b>x</b>			As the construction and rehabilitation works are not complete yet, the site is reinstated only partially.
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