

Biannual Environmental Monitoring Report

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GEORGIA: GEORGIAN SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM, Tranche 1

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ABBREVIATIONS

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

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1. PART I. INTRODUCTION

1.1 Preliminary Information

Projects' Background

Upgrading and improvement of local transport and transport-related infrastructure plays a significant role in the development of Georgia infrastructure. To this effect a number of important activities have been implemented and financed from the budget of Georgia and from other sources. Development of transport and related infrastructure plays an important role in improvement of Georgia's urban infrastructure. Recently several significant programs, financed through state budget, loans and grants, have been implemented with this regard.

On 05 August, 2010 MFF - Sustainable Urban Transport Investment Program Tranche 1 Loan and Project agreements were signed between Georgia and Asian Development Bank. MFF-Sustainable Urban Transport Investment Program – Tranche 1 (SUTIP T1) includes (i) Transport Infrastructure Improvement; (ii) Institutional Capacity Development and (iii) Project Management Facility components.

The program will provide efficient, reliable and affordable urban transport infrastructure and services, thereby increase economic growth potential and competitiveness of urban communities, improving livelihoods of over 1.5 million people (approx. 35% of Georgian population). The program will also: (I) improve urban, environment and communities' access to economic opportunities and to public and social services; (II) promote efficient and sustainable urban transportation; and (III) generate income and employment opportunities.

The environment classification for Tranche 1 is Environmental Category B, as all subprojects under SUTIP 1 were classified as category B which will not have significant irreversible or permanent negative environmental impacts during or after construction and requires preparation of Initial Environmental Examination (IEE). The environmental categorization of subprojects was conducted using ADB's Safeguard Policy Statement (2009). Required environmental assessments of SPs are conducted and IEEs are prepared in accordance with Environmental Assessment and Review Framework approved for SUTIP 1 in May, 2010.

Projects' Area

Sustainable Urban Transport Investment program Tranche 1 includes several projects in the different municipalities of Georgia. Program aims efficient, reliable and affordable urban infrastructure development and service improvement. In effect, urban transport service will be improved, and the level of different types of public and social services will be increased.

Among the Sustainable Urban Transport Investment program Tranche 1 subprojects, which are ongoing now, are:

- Tbilisi Metro Line 2 and Creation of University Station EPCM;
- Anaklia coastal improvement EPCM (Phase 1);

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Tbilisi Metro extension EPCM:

Tbilisi suffers from traffic congestion and air and noise pollution, loss of green areas and degradation of historical buildings and monuments. Serving 250,000 passengers daily, the Tbilisi Metro is playing a significant role in the urban transport system and can serve as the backbone of the city's network. Tbilisi Municipality is now exploring options for expanding the network. A first phase is planned to extend the line to the station "University" at Saburtalo district, where there is a large population, significant number of students and high traffic flow. The construction of the "Delisi-University" section of the metro started in 1985 but ceased in 1993 for financial and technical reasons. In 1998 construction resumed and "Vaja Pshavela" station was opened in 2000 with only one way in operation. The remaining tunnel has been bored up to the university station, including the station shell, escalator shaft and the exits. This Project aims to resume and complete the construction of the metro tunnel along Vaja Pshavela Avenue and the "University" subway station, to benefit more than 150,000 people and increase ridership of the metro network. Total length of metro station line is 2.2km.

Anaklia coastal improvement EPCM (Phase 1)

Anaklia is a small town and seaside resort in western Georgia. It is located in the Samegrelo-Zemo Svaneti region, at the place where the Enguri River flows into the Black Sea, near the administrative border with Abkhazia. Anaklia is supposed to become a tourism center in Georgia. Anaklia infrastructure development and rehabilitation plan was announced by the Government of Georgia. Erosion processes take place on various places at Georgian Black Sea coastal line and Anaklia is one of them. Today this process is seriously destroyed coastline.

The project aims at Anaklia shoreline rehabilitation, restoration of the full profile of beaches to the possible limits (which is necessary for wave breaking and suppression of its power and assigns to the beach a function of bank protecting structure), selection of the most optimum types and design of hydro-technical coast protecting structures.

Coastal protection structure of underwater breakwaters is totally composed with 6 units (for phase 1) constructed from 5 Ton and 10 Ton tetrapods. The space between one to another breakwaters units is 90m but space between second one to third one (from Enguri river mouth to Tikori river mouth direction) is 100m. The length of first underwater breakwater (from Enguri river mouth to Tikori river mouth direction) is 200m, from No.2 to No.6 – the spacing is 300m. Therefore, total length of underwater breakwater is 1,700m. Length of artificial nourishment is 2,300m. Amount of Sand for phase1 is 129,000 m³. The area of 300m length from river mouth to start point, where artificial nourishment has to be started, will be covered by armor stones to prevent erosion against incident wave. Total Width of artificial nourishment is 60m, from beach line to land side is 40m and forward to seaside is 20m. Slope of beach line will be composed with 1:20. Enguri river Revetment will be performed from the river mouth (where is located a marina) to starting point of artificial nourishment. The distance will be about 300m.

Infrastructure improvement will support infrastructure investments to rehabilitate, improve and expand the beach of Anaklia and will benefit accrue principally from the protection of land and infrastructure from erosion and damage, the avoidance of some other costs and increasing number of tourists. For the interventions, benefits arise from the protection of (i) rural land, (ii) houses (iii) roads and other infrastructure. Coast protection measures need to be taken to protect the unique place and landscape. The design of approximately 4 kilometers of coastal line will create a new and attractive tourist

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destination on the Black Sea Coast, able to be the engine of the development of the region of Zugdidi, Ganmukhuri and Anaklia.

1.2 Construction activities and projects' progress during progress during the reporting period

Civil works at Tbilisi Metro extension subproject has not been started yet.

Consulting services for Tbilisi Metro extension EPCM: (1)

Consulting company "Euroestudio" submitted draft detailed engineering design in December 2012. MDF and Tbilisi Transport Company (TTC) reviewed the DD and comments have been sent for consideration to Euroestudio. MDF recruited an international consultant to review the draft DD. The independent metro specialist prepared and submitted to MDF on May 17 the Overall Review Report, on May 31 the Draft Final Report with the list of comments for each major item of the project. Given the extent of the comments provided on the detailed design and coming from the complexity of the assignment of the individual consultant, contract variation was considered to ensure sufficient time was allocated for the review of the final detailed design. Therefore, MDF upon ADB consent extended the Contract of the Metro expert and added 20 more days. The independent consultant submitted to MDF the Final Review Report on August 8. The expert confirmed the necessity of adoption of all international safety standards and notably creation of the emergency exit recommended by the EPCM consultant. The reports have been sent to Euroestudio. Following the expert's recommendations respective amendments were made to detailed design. TTC requested to provide justification if the proposed signaling system in the new station is compatible and fit the existing system used in Tbilisi metro. MDF and TTC met with the consultant team in October, November and December to discuss the status of incorporation of MDF and TTC comments in the detailed design. A joint meeting was also held in December with participation of ADB mission and the Transport Department of Tbilisi City Hall. Consulting Company made relevant amendments to DD according to MDF and TTC requests and recommendations. Close interaction between Consultant, MDF and TTC is ensured in order to finalize detailed design in the first half of February 2014 and submit project documentation to ADB. After ADB's approval the design materials, MDF announced the Metro tender for civil works on 26.06.2014.

An ADB environment safeguard country review mission was conducted on from 8 to 11 April 2014 and visited the Tbilisi metro project site. Clarification, explanation and detailed comments were provided on the Tbilisi Metro IEE from ADB. IEE document was revised by Euroestudio and all comments and remarks have been reflected in final document. Public informational meeting, regarding project objectives and IEE aspects, with population living at nearby territories of project area, was organized and held by MDF on May 9. Meeting materials – minutes of meeting, photos and attendance list, were reflected in IEE document. Final version of approved IEE document is disclosed at MDF web site: <http://mdf.org.ge/?site-lang=en&site-path=documents/&id=525>

Civil works for Anaklia coastal improvement EPCM (Phase 1):

The construction works started on July 24, 2013. During reporting period following main work activities have been carried out by the Contractor Company – Modern Business Group Ltd (Azerbaijan):

- Construction of temporary jetty;
- Producing of concrete TTP (5T -2077 units and 10T – 3357 units) in the working yard territory; (Production of 5T TTP was finished on April 8).
- Sea bottom excavation works -1022 m³;

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- Surface water drainage during rains in the territory of working yard;
- Backfilling and leveling of the sea bottom - 352 m³;
- Installation of concrete TTP in the sea (From June 16);
- Transportation of construction material from the quarries to the construction site.

1.3 Changes of project organization and environmental management team

The MDF is the project executing, implementing and disbursing agency. MDF is responsible for general management, planning and supervision. MDF ensures that potential adverse environmental impacts arising from the Project are minimized by implementing all the mitigation measures presented in the environmental impact assessment ("EIA") or Initial Environmental Examination (IEE), as applicable and environmental management plan (EMP).

Environmental and Social Safeguards issues are carried out by the MDF through a special unit called Environmental and Social Safeguards team established after deep institutional reform, which has been undertaken at the MDF. The MDF is now composed of 12 units. Environmental and social safeguards team consists of three environmental safeguards and two social safeguards specialists. Environmental and Social Safeguards team has a Team Leader who is an advisor to Executive Director of MDF on environmental and social safeguards issues. Environmental unit reviews the EIAs and EMPs related to the MDF projects and performs supervision of the performance based on approved EMPs, EIAs, and environmental standards.

1.4 Relationship with contractors, owner, lender etc

Anaklia coastal improvement project

The MDF has an overall responsibility for the Project implementation. Construction contractor of the project is – Modern Business Group Ltd (Azerbaijan) and Supervised by the DOHWA Engineering Co., Ltd (Republic of South Korea).

Environmental monitoring in the field is permanently implemented by Construction (Modern Business Group Ltd (Azerbaijan) and Supervision (DOHWA Engineering Co. Ltd (Republic of South Korea)) companies' environmental specialists.

The construction contractor has been employed a new Environmental specialist responsible for implementation of EMP, daily environmental monitoring and reporting. Construction Contractor company's environmental specialist Levan Sulikashvili was replaced by environmental specialist on site, Zurab Revazishvili. Changes have been implemented at supervising company as well. Environmental specialist Zaal Askurava was substituted by Revaz Gujabidze. They are handling environmental tasks and issues in the field in compliance with the ADB safeguard Policy requirements and Georgian environmental regulations.

Environmental issues arising from the construction activities should be immediately brought to the attention of the construction Supervision Company Dowha and through them to MDF's environmental safeguards team in order to coordinate efforts and ensure immediate mitigation of impacts, protect the environment and safeguard the health and welfare of the local communities.

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The environmental management team prepares quarterly Environmental Monitoring Reports based on the information submitted by the Contractor.

The following works were performed by the environmental management team:

- On-site supervision of construction activities, monitoring the project performance;
- Monitoring and implementation of the EMP, updated SEPM;
- Updated quarry license;
- Elaboration of new forms of every day check list;
- Ensuring that the contractors understand what is to be done to rectify and address any issues identified through monitoring;
- Environment and Safety Trainings.

Tbilisi Metro extension project

For “Tbilisi Metro extension” project, as already was mentioned, the tender for selection of the Contractor for civil works, was announced on 26.06.2014. Bid opening will be held on August 26, after completion of evaluation process contractor will be selected. Regarding construction supervision, EPCM contract is being signed with Eurostudio in 2012 which will be responsible for supervision of the project during its implementation.

1.5 Grievance Redress Mechanism

Anaklia coastal improvement project

MDF has overall responsibility for project implementation and environmental compliance. The administrative bodies responsible for environmental protection are Ministry of Environmental protection and the municipality of Zugdidi. Affected population and stakeholders may send their grievances, related to the project induced environmental impacts and nuisance to Project Implementation Unit or directly to the administrative bodies responsible for the environmental protection.

Special registration journal for compliances is created at Anaklia construction site. Also, the copy of journal with mobile number of project manager is placed at local Municipality. An international environmental specialist Mr. Pank Wan-Seon arrived to Georgia on May 13 in order to provide guidance and training to improve safeguard filing and GRM system. Training was conducted on May 22. No complaints have been fixed during reporting period.

Tbilisi Metro extension project

No civil works has been started yet within Metro project. After starting the implementation of the Project, there might be several issues related to environmental hazards and disputes on entitlement

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processes may occur due to the Project activities. For example, intensive schedule of construction activities; inappropriate timing of construction vehicle flow; waste; noise and air pollution from construction activities; ecological disturbances; cultural conflicts between migrant workers, are some of the environmental issues that are likely to arise from the Project activities.

According to the existing legal and administrative system in Georgia, there are several entities responsible for addressing environmental complaints of population and interested parties. The administrative bodies directly responsible for environmental protection within the project area are MoE, municipal offices (gamgeoba) and Tbilisi City Hall. The affected population and stakeholders may send their grievances, related to the project-induced environmental impacts directly to the mentioned administrative bodies responsible for environmental protection.

MDF, as EA will deliver grievances to relevant authorities, in case if such grievances are sent to MDF. The official administrative bodies are obliged to respond to the grievances that have been received from population or other interested parties in accordance with the requirements of the Administrative Code of Georgia. Grievance Redress mechanism will be set up for the project to deal with both the environmental and social issues. MDF as the Executive Agency (EA) has overall responsibility for project implementation and environmental compliance. MDF as the EA will facilitate the grievance resolution by implementing a project-specific Grievance Redress Process (GRP).

MDF will facilitate the establishment of a Grievance Redress Committee (GRC) and Grievance Focal Points (GFPs) prior to the Construction Contractor's mobilization to the construction site. The functions of the GRC and GFPs will be to address concerns and grievances of the local communities and affected parties as necessary. EA will assist residents of affected territories (Tbilisi municipality) and affected community to identify local representatives to act as Grievance Focal Points (GFP).

2. PART II: ENVIRONMENTAL MONITORING

During reporting period construction works were implemented only within of **Anaklia coastal improvement sub project (phase 1)**. Therefore the paragraphs below include information related to the said SP.

Within the reporting period, no adverse environmental impacts related to the works were noted or observed. SEMP was revised by contractor and submitted to MDF after approval of Supervision Company. Construction materials (sand and stones) were obtaining only from licensed companies.

There are no protected areas, wetlands, mangroves, or estuaries or archeological/cultural heritage within the project area. There are no land acquisition and resettlement issues involved. The nearest residential house is located in 300-400m distance from the working yard. In order to limit soil disturbance, the access to the site was limited to construction workers and the site was fenced.

The following items are monitored during the implementation of the project by Contractor's and Engineer's environmental management specialists:

- Air Quality;
- sea water quality;

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- Soil contamination;
- Noise;
- Flora and Fauna;
- Sea biodiversity ;
- Landscape structure;
- Social Environment;
- Radiation background;
- Construction Waste;
- Construction Safety.

Air Quality

Material (aggregate and sand) were brought from the borrow pits when it was required. Speedy completion of work and proper site clearance after completion are ensured. Wheels and undercarriage of haul trucks are clean and washed prior to leaving construction site.

Dust was controlled through watering the access roads where driving could easily generate dust. During the transportation of contraction material, the trucks were covered with special tarpaulins or other cover means to avoid spreading of fine aggregated material in the air and although, the transportation of materials were carried out by initially selected and determined routs and the speed of the trucks are limited.

Dust generation was controlled while unloading the loose material at the site by sprinkling water inside barricaded area. The engines of the equipment were checked every morning.

Sea Water quality

Marine works for excavation and placing stones for leveling bottom of the sea preparing for placing TTP, have been carried out with extreme care from point of view spills, water turbidity, labor safety, maintaining EMP and SEMP requirements and regulations.

During marine works - dredging, stone filling and placing TTP units - works were monitored closely for sea water turbidity level. During this works contractor environment specialist was visually controlling turbidity level, making test checks in every 4 hours. In case if the turbidity measured during marine works at a distance of 250 meters from the point of works exceeds the background turbidity by more than 250mg/l the Contractor will be instructed to take suitable measures to reduce the turbidity.

After starting installation of concrete TTP in the sea, tests of turbidity measuring are carried out according to above mentioned standards. No deviations from the standards have been identified during measuring.

Vehicles fueling place is located approximately 300 m far from sea shore, adequate lining of the ground by concrete and confinement of possible operation and emergency spills are provided.

Soil Contamination

Fuel was kept in the covered containers at the impermeable surface area. Taking into consideration the specific characteristics of coastal protection project, there is no soil contamination in the scope of

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captured project.

Noise

The plan of transportation routes and timing were agreed with local Municipality and patrol police since the project has started. Wheels and undercarriage of haul trucks were checked and fixed to maintain good vehicle condition not to make any noise and not to disturb residential people even though there are no residential people within 1km range.

Drivers were informed to limit speed to 20-25 km/h to avoid use of horn in the town. Local population was informed about project works. The Contractor is working during night time to catch up schedule but the supervisor instructed that the materials should be transported during the day time. And the contractor followed the supervisor's instruction all the time. According to the works schedule, not more than 5-6 trucks were working at the same time and the noise created from them were not exceeding the limitation.

Flora and Fauna

There are no trees, vegetation, bushes, plants, land and sea animals in the project area, as sandy coasts with the hot sun, salty water and wind are not convenient environment for living organisms. Therefore there are few living organisms on the coast surface: crawfish and low plants in the coastline. Thus construction activities have no impact on flora and fauna.

Waste

Produced waste on construction site was stored at waste storing areas designated for hazardous, domestic and construction waste storage. The part of construction waste (inert materials) was used by contractor for secondary meanings. Regarding the hazardous waste, such as oil contaminated towels or oil contaminated soil, Contractor is accumulating them separately in special containers. Hazardous waste will be removed from construction site by authorized personal only in accordance with safety regulations

Sea Biodiversity

During marine works, loss of Bio ecology is expected (sea plants) but because of insignificant Influence additional activities are not required.

Landscape

Construction activities do not make any significant impact on the landscape of the territory.

Social Environment

There is no any adverse impact on social environment as the nearest residential house is far from 300-400 m. The intensity of traffic caused by the Contractor's transporting equipment is increased not much, around 3 trucks in every 2 hours; it means that not air contamination or noise is caused. Only positive impact is happened as the almost 90% of people employed by the Contractor Company are locals, and

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their conditions is improved. By the end of May a Complaint Logbook has been established for local population at the local municipality.

Radiation background

Radiation background of the captured territory has not been changed by the construction activities.

Construction Safety

Construction activities are performed according to the construction safety requirements and regulations. Workers are using personal protection equipment. The project area is fenced and warning signs are placed. Training and instructions on environmental and safety issues was provided to workers. On 21st of May, 2014 Mr. Park Wan Seob, DOHWA's international specialist carried out a training in Environmental Safeguard issues and general safety measures on project site for technical managers and operators of specific construction vehicles (such as crane, bulldozer etc.) engaged in the project to prevent workplace accidents and minimize the damage in case of an emergency situation as well as to increase the understanding of environmental issues during the project implementation. Based on the request of MDF, conduction of training in marine works, safeguard issues and safety measures was ensured by Construction Company in May 15, 2014.

Ground water disposal

The places that could be the source of ground water contamination are fenced with ground and special material. Special filter is arranged around the concrete batching plant for accumulation of contaminated water and some part of special filter was spoiled and the supervisor instructed to change it and the contractor implemented immediately.

The contractor carried out measurement of soil and atmospheric air in every three months. Last measuring was conducted on June 25.

3. PART III: ENVIRONMENTAL MANAGEMENT

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

IEEs including EMPs are integral parts of the contracts and their implementation is mandatory for contractors. Site inspections and audits and problematic issue notices are under the Dohwa's and Construction Company's Environmental Specialists responsibilities. Contractor of the Anaklia coastal improvement (phase I) sub project submits monthly progress reports to supervisor and MDF which includes chapter on environmental performance. Consultant Company Dohwa prepares quarterly environmental report to MDF on progress of the environmental management plan. In spite of above mentioned, respective reporting still remains one of the certain problems.

SEMP has been revised by Construction Company. Updated document was approved by Consultant Company Dohwa and submitted to MDF in June .

3.2 Noncompliance notice

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In April 2014 ADB's environmental safeguards review mission has been conducted. During the mission site monitoring visit was implemented. The situation at Anaklia Coastal project was assessed as partly compliant with respect to ADB's environmental safeguards requirements. Remarks and statements declared within the mission were as following:

- The IEE report was not available in the project files and not known to Dohwa and the contractor for use;
- No track records available;
- Dohwa international Environmental specialist has not been mobilized since the project started;
- National environmental specialists of Dohwa and contractor need improvement and training in safeguard requirements;
- SEMP have not been reviewed and endorsed by Dohwa;
- GRM and complaint logbook not established;
- Personal protective equipment (PPE) should be provided by the contractor to the workers.
- No activities which could produce noise and dust, are allowed at the camp site during the time when the summer camp, is in use;
- Monitoring will be conducted by Dohwa (end May) and include the monitoring results in the bi-annual Environmental Monitoring Report (EMR) for the period Jan-Jun 2014. The EMR will be submitted by MDF before end Jul 2014.

During reporting period the number of site visits has been implemented by MDF's environmental specialists to check environmental compliance of construction works and effectiveness of supervisory company's activities. Records of on-site visits are kept at MDF office.

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3.3 Corrective action plans

All mitigation measures during pre- and construction phases of SPs are to be implemented by construction contractors. Special checklists for site inspections have been elaborated. Site inspections are carried out every day by the contractor's specialist together with supervisor's specialist and possible impact sources are being checked. In case of any deviations corrective actions and mitigation measures are applied.

Contractor has provided relevant contracts with licensed companies on final disposal of waste. The waste has been removed from construction site by authorized personal only in accordance of safety regulations. For the proper management of accumulated waste, Construction Company has signed contracts with the companies for waste removal. For hazardous waste with Ltd "Sanitari" (contract N2911-13), for domestic waste with Zugdidi municipality and for construction waste - "Georgian Solid waste management company" (contract N723).

SUTIP Tranche 1 Loan Review Mission conducted in May-June, assessed the Anaklia subproject as compliant with ADB's safeguards requirements. Current status of the project and successful implementation of all necessary actions and compliance to the ADB requirements is stated in the Aide Memoir prepared after the mission conducted in June:

- The IEE report is available on the site for Dohwa and the contractor's use;
- Track records such as site inspection and monitoring reports are in place and available;
- DOHWA's international environment specialist has been mobilized at project site on May 14 and conducted training on May 22, regarding validation of monitoring plan and improvement of safeguards files and GRM system;
- National environmental specialists of engineer and contractor have been replaced and new staff have been trained by the international environmental expert;
- Site specific environment monitoring plan (SEMP) has been reviewed and endorsed by the Engineer;
- GRM and complaint logbook has been established.

In order to ensure implementation of corrective actions in regards to revealed problematic issues, the works have been commenced according to the action plan defined during the mission jointly with ADB and reporting has been conducted on a weekly basis during May-June.

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Problematic issues observed during reporting period and their current statuses are provided in the table below.

Presented information is provided by supervision company DOHWA to MDF.

Date: Occur- Corrected	Corrective Action	Origin	Status
05.03.2014- 10.03.2014	According to Schedule, labors are increased and some of them do not have any gloves and safety boots. Every labor has to wear safety clothes and crafts during working hours and smokers has to throw out waste of cigarette on trash bin to prevent from fire.	Supervising Environment Specialist	Corrected
05.03.2014 - 10.03.2014	In the place where concrete pours, labors are pouring not through the pump car and they are using their own hands to adjust level of tetra pod crest. A little of concrete is falling down on land. Not only batch plant area but also the place of producing has to be covered.	Supervising Environment Specialist	Corrected
20.05.2014- 29.05.2014	Every three month the Contractor has to take a test to check water quality (See Annex B)	Supervising Environment Specialist	Corrected
20.05.2014- 29.05.2014	Every three month the Contractor has to be done laboratorial test of the air (See Annex A)	Supervising Environment Specialist	Corrected

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05.03.2014- 29.05.2014	Contractor has to submit the list of Contractor's equipment and indicate their technical conditions, capacity, date of producing, engine' conditions, are they checked or not in the scope of CO emissions, taking into consideration their exploitation period deadline.	Supervising Environment Specialist	Corrected partially. Some of them are not submitted yet
06.01.2014	Please submit the data, where are you performing the repairs of the Contractor's equipment and in case of oil contaminated towels and oil cans, where you are allocating such waste.	Supervising Environment Specialist	corrected
05.03.2014 - 10.03.2014	Fire emergency equipment in the working area is prepared in some part but more equipment has to be prepared in every main structure and office and do not keep it outside for the maintenance. It should be put in box.	Supervising Environment Specialist	Corrected
06.01.2014	Indicate the duration of operating of Contractor's each equipment to evaluate the noise and air impact	Supervising Environment Specialist	Not corrected. According to Georgia's law, there is no any regulation to prohibit of using old equipment
05.03.2014 - 10.03.2014	Petrol Pump has to be maintained (See Annex I)	Supervising Environment Specialist	Corrected
13.01.2014 - 15.01.2014	Before sand and stone are filled on beach area, laboratory tests has to be done	Supervising Environment Specialist	Corrected(Temporary Protection Structure required by Client)

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05.03.2014- 10.03.2014	Carry out the asking of residential people if they are disturbed or not with construction activities (See Annex G).	Supervising Environment Specialist.	Corrected.
20.01.2014- 25.01.2014	Harmful construction waste has to be stored and transferred to the Municipal council for liquidation (See Annex D)	Supervising Environment Specialist	Corrected
05.03.2014- 10.03.2014	Before starting of excavation, the Contractor has to submit their plan how to reduce water turbulence in bottom and survey flora once more to make sure that there is no any flora in project area.	Supervising Environment Specialist	Corrected
02.04.2014- 20.05.2014	The contractor had to develop an Emergency Situations Management Plan	MDF Monitoring Mission	Corrected
02.04.2014- 05.04.2014	Environmental specialist of the contractor should perform permanent monitoring at the construction site and keep daily and/or weekly records and respective reporting	MDF Monitoring Mission	Corrected
02.04.2014- 05.04.2014	The contractor should enter into contract with the noncommercial legal entity "Zugdidasuptaveba" on disposal of construction waste	MDF Monitoring Mission	Corrected

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02.04.2014- 06.04.2014	A warning sign placard (construction work-related) should be placed at the construction site (See Annex J)	MDF Monitoring Mission	Corrected
02.04.2014- 20.05.2014	Upon intensive commencement of works in the sea, water testing should be conducted together with turbidity control, which should be constantly ongoing (See Annexes B,C)	MDF Monitoring Mission	Corrected
11.04.2014- 20.05.2014	The IEE report was not available in the project files and not known to Dohwa and the contractor for use; No track records available	ADB Environmental Monitoring Mission	Corrected
11.04.2014- 15.05.2014	Dohwa International Environmental Specialist will be mobilized on-site by 15 May	ADB Environmental Monitoring Mission	Corrected
11.04.2014- 20.05.2014	SEMPs have not been reviewed and endorsed by Dohwa	ADB Environmental Monitoring Mission	Corrected
11.04.2014- 20.05.2014	GRM and complaint logbook not established (See Annex G)	ADB Environmental Monitoring Mission	Corrected

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11.04.2014- 15.04.2014	Personal protective equipment (PPE) should be provided by the contractor to the workers. No activities which could produce noise and dust are allowed at the camp site during the time when the summer camp, is in use.	ADB Environmental Monitoring Mission	Corrected
01.06.2014-	Isolating fuel station with sand bags.(See Annex I)	Supervising Environment Specialist	Corrected
10.06.2014- 11.06.2014	Every day safety briefing has not been carried out.	Supervising Environment Specialist	Corrected
15.06.2014- 16.06.2014	Every day safety briefing has not been carried out.	Supervising Environment Specialist	Corrected
17.06.2014- 18.06.2014	Watering working yard on regular basis.	Supervising Environment Specialist	Corrected
24.06.2014- 25.06.2014-	Watering working yard on regular basis (Concerning fuel issues watering process hasn't been fulfilled.)	Supervising Environment Specialist	Corrected

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4. Annexes

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Monitoring Data - Presented table is provided by supervision company DOHWA to MDF.

Object of Monitoring	Control/Sampling Point	Technique	Frequency/Time	Target	Entity responsible for Monitoring
1	2	3	4	5	6
Atmospheric air	Business yard, Construction sites	<ul style="list-style-type: none"> • Visual control • Technical check-up of machinery • Laboratory Checks every three month. 	<p>The monitoring of the Atmospheric Air quality has been carried out by contractor environmental specialist on daily basis and by supervising environmental specialist. During the Tetrapod production, transportation operations, in dry weather on a periodic basis, technical check-up of machinery before works, during the installation of underwater breakwater.</p> <p>Laboratory test are taken in every three month (Laboratory tests has been taken on 09.01.2014 and 25.06.2014 See Annex A). During this period no problems has been detected.</p>	<ul style="list-style-type: none"> • Ensuring compliance with the established quality norms of ambient air quality; • Minimizing the impact on the population health; • Ensuring the personnel's safety. 	Construction Contractor
Noise	Business yard Construction sites The nearest receptor (residential houses)	<ul style="list-style-type: none"> • Control; • Measuring; • Technical check-up of machinery. 	Monitoring of the construction process noise level has been carried out by contractor environmental specialist on daily bases and by supervising environmental specialist. Regular	<ul style="list-style-type: none"> • Ensuring compliance with health and safety norms; • Minimizing the population disturbance; • Ensuring comfortable working conditions for the workforce. 	Construction Contractor

Biannual Environmental Monitoring Report

			<p>control (particularly during much “noisy” operations);</p> <p>Measuring (In case of grievance);</p> <p>Technical check-up of machinery before works. The nearest receptor (residential houses) is approximately 400-500 m away from construction site, drivers are maintaining the safe speed limits 30 kph on main roads and 10 kph on construction site, there for no noise complains has been detected. During this period no grievance or problems has been detected.</p>		
Soil	Construction camp - Material and waste storage areas; Construction sites	<ul style="list-style-type: none"> • Visual control; • Supervision over the waste management; • laboratory control over the soil quality; • Technical check-up of machinery. 	<p>Monitoring of the construction process soil mitigation level has been carried out by contractor environmental specialist on daily basis and by supervising environmental specialist.</p> <p>Regular check-up; Inspection after completion of works;</p> <p>Laboratory control – as necessary (in case of oil spills). Material and waste storage areas are indicated and isolated. During this period no problems has been detected.</p>	<ul style="list-style-type: none"> • Preserving the soil stability and quality; • Minimizing the impact on other receptors depending on the soil quality (vegetation cover, holiday-makers, etc.). 	Construction Contractor

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Increased seawater turbidity	Sites in the sea where the sand removed during the seabed treatment and from the seabed is to be placed.	<ul style="list-style-type: none"> • Visual control; • Turbidity analysis. 	Monitoring of the Increased seawater turbidity level is been carried out by contractor environmental specialist on daily basis and by supervising environmental specialist. Permanent visual control; Identifying the degree of turbidity through analysis (in every 4 hrs. During the work). Upon intensive commencement of works in the sea, water testing has been conducted together with turbidity control, which should be constantly ongoing. (MDF Monitoring Mission occurred 02.04.2014 corrected 20.05.2014).	<ul style="list-style-type: none"> • Maintaining ichthyofauna and microphytes. 	Construction Contractor
Underground water	Construction camp - Material and waste storage areas; Construction sites Gas station	<ul style="list-style-type: none"> • Visual control of soil quality; • Laboratory control of soil quality (in case of spills); • Technical check-up of machinery. 	Monitoring of the underground water mitigation level has been carried out by contractor environmental specialist on daily bases basis and by supervising environmental specialist.Regular check-up; Laboratory control as necessary (in case of oil spills). Material and waste storage, Gas station areas are indicated and isolated. During this period no problems or oil spills has been detected	<ul style="list-style-type: none"> • Guaranteed protection of the underground water quality 	Construction Contractor

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<p>Surface water: the Black Sea, the rivers Kitori and Enguri</p>	<p>Construction ground Business yard</p>	<ul style="list-style-type: none"> • Visual control; • Supervision over the waste management and sanitary conditions. • Surface water laboratory control. 	<p>Monitoring of the Surface water mitigation level is been carried out by contractor environmental specialist on every day basis and by supervising environmental specialist Regular check-up and inspection; Laboratory control – as necessary (in case of oil spills). Sea water Laboratory test are taken in every three month (Laboratory tests has been taken first tests in 2013 on 28.12.2013 and new on 25.06.2014 See Anne B). During this period no problems has been detected</p>	<ul style="list-style-type: none"> • Protecting the water quality in the river; • Reducing the impact on the receptors (water biodiversity, etc.) depending on the river water quality. 	<p>Construction Contractor</p>
<p>Negative visual impact</p>	<p>Construction camp - Material and waste storage areas; Construction sites</p>	<ul style="list-style-type: none"> • Visual control; • Supervision over the waste management and sanitary conditions. 	<p>Monitoring of the negative visual impact is been carried out by contractor environmental specialist on every day basis and by supervising environmental specialist Regular check-up and inspection; After completion of works. During this period no problems has been detected</p>	<ul style="list-style-type: none"> • No dissatisfied population; • No dissatisfied pedestrians. 	<p>Construction Contractor</p>
<p>Waste</p>	<p>Business yard and/oe adjacent area;</p>	<ul style="list-style-type: none"> • Visual control of the area; • Control over the waste management. 	<p>Monitoring of waste management issues is been carried out by contractor environmental specialist on daily bases and by supervising environmental</p>	<ul style="list-style-type: none"> • Protecting soil and water quality; • Reducing the risk of negative visual impact; • No dissatisfied population. 	<p>Construction Contractor</p>

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			<p>specialist. Regular check-up and inspection;</p> <p>After completion of works. Construction waste is been accumulated on construction site in special isolated areas divided by hazardous, domestic and construction waste. Construction company has signed contract with the companies for waste removal. Waste has been removed from construction site buy authorized personal only in accordance of safety regulations (See Annex D).</p>		
Labor safety	Working ground	<ul style="list-style-type: none"> • Inspection; • Availability of personal protection equipment and periodic control over their good maintenance; • Control over the meeting the requirements for labor safety. 	<p>Monitoring of the labor safety issues has been carried out by contractor environmental specialist on daily based and by supervising environmental specialist. Before the works;Periodic control during the works.Some of the labors don't have PPE equipment problem detected by supervising environment specialist date: 05.03.2014, corrected 10.03.2014.</p>	<ul style="list-style-type: none"> • Ensuring compliance with health and safety norms; • Avoiding/minimizing traumatism. 	Constructi on Contractor

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Photographs:



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Atmospheric Air Test Results

საქართველო
შ.პ.ს „ლაბორატორიული
კვლევის ცენტრი“



Georgia
L.T.D „Laboratory
Research Center“

ქ. ფოთი შიქაბერიძის ქ. №2 ტელ: (0493 22-17-35)

POTI Miqaberidze st. №2 Tel: (0493 22-17-35)

Air Quality Result

Registration №1/1 laboratory test research

Sample description : Air


Sample location Construction of coastal Protection Facility in Anaklia

Research objective : Bacterial and Chemical Indication

Date of sample collection 09.01.2014

Bacterial and Chemical Indicators	Discovered Composition	Maximum Permissible Concentration
Mesophiles and micro particles	25 p.u.	100 produced units
Dust	0,1 gr	0,2gr
Background radiation	0,01 mcr/h	0,02mcr/h

Performer: Physician Laboratorian: R. Komakhidze

The Laboratory Supervisor:  E. Khatiashvili

Result date: 31.12.13

Biannual Environmental Monitoring Report

საქართველო
შ.პ.ს „ლაბორატორიული
კვლევის ცენტრი“



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ნიმუშის ჰიგიენური გამოკვლევის შედეგი

სარეგისტრაციო № 2 ლაბორატორიის, სადაც ჩატარდა გამოკვლევა

ნიმუშის დასახელება ჭიქო
ნიმუშის აღების ადგილი ანაკლია, დამოუკიდებლობის საამშ. ყბა 25.06.14წ.
გამოკვლევის მიზანი ქმ. და ხა. ბაქტერიები

ნიმუშის ლაბორატორიაში მიღების თარიღი 25.06.14წ.

№	ბაქტერიოლოგიური და ქიმიური მ ა ნ ე ე ნ ე ბ ლ ე ბ ი	აღმოჩენილი კონცენტრაცია	გამოკვლევის ნ. ტ. დ.
1.	გვ. აჩ. და ფა. ანაე. ბიქ.	20. გ. წ. ა.	
2.	მსკვეთი	0,2	
3.	ხატილოვი ფორი	0,013 მჩ/სთ	

შემსრულებელი: ექიმი-ბაქტერიოლოგი: [Signature]

ექიმი-ლაბორანტი: [Signature]

ლაბორატორიის ხელ-ლი: [Signature]

პასუხის გაცემის თარიღი: 30.06.14წ.



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Sea Water Test Result

საქართველო
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The Act of Test Result

„27 June, 2014

Client: L.T.D „Hydro Engineering Company“

Sample Description: Sea Water

Sample Location: Time: The number of Act №405; The Construction Site, Anaklia; 25.06.14, 12⁰⁰ o'clock.

Description of Normative Document: Government Resolution of Georgia №425 31.12.13.

Technical Resolution for the Protection of Surface Water from the Pollution: Resolution of the Government of Georgia №26 03.01.2014:

Technical Resolution for the Approval Regulations of Taking Water test sample.

Starting and completion Date, Time: 25.06.14, 15⁰⁰ 27.06.14.

The Act of Test Result have been given for the submitted sample:

Chemical Indicators

№	Description of Specific Characteristics	Detected Concentration	Documentation of Technical Normative
1	Smell	-	GOSTI 3351-74
2	Turbidity	-	GOSTI3351-74
3	Colour	10 cm is not in column	GOSTI3351-74
4	Hardness	-	GOSTI 4151-72
5	Calcium	-	LURIA PG.118
6	Mg	-	LURIA PG.122
7	Hydrogen Indicators	-	ISO 10523-08
8	Dissolved Oxygen	-	LURIA GV.176
9	Oxygen's Chemical Requirement	-	LUIA PG.74
10	Biochemical Usage of Oxygen. Usage of Oxygen 5 and Total Usage of Oxygen.	-	LURIA PG.82
11	Dry Residue	19400 mg/l	GOSTI 18164-72
12	Nitrates	-	GOSTI 18826-73
13	Chloride	-	GOSTI 4245-72
14	Hydrogen Sulphide	-	LURIA PG.412
15	Nitrite	-	GOSTI 4192-82
16	Iron	-	GOSTI 6332
17	Arsenic	-	GOSTI 4152-89
18	Copper	-	GOSTI 4388-72
19	Sulphates	-	GOSTI 4389-78
20	Manganese	-	GOSTI 4974-72
21	Polyphosphates	-	GOSTI 18309-72
22	Suspended Particulates	Isn't detected	LURIA pg.43
23	Permanganate Oxygen	-	ISO 8467-93
24	Petroleum products	0,1 mg/l	URIApg.306

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Microbiological Index

Nº	Description of Determining Characteristics	Detected Concentration	Documentation of Technical Normative
1	Mesophiles Aerobic and Facultative Anaerobes Micro Organisms	-	ISO 6222:1999
2	Total Coliforms	-	ISO 9308-1-2007
3	E. Coli	-	ISO 9308-1-2007
4	Salmonella	-	ISO 19250:2010
5	Str. faecalis	-	ISO 7899-2:2000
6	Thermo tolerant coliforms	-	ISO 9308.2:2012
7	Sulphide Reducing Clostridium	-	ISO 6461-2-1986

The Chief of Research LaboratoryCenter:

C. Daushvili



/Ts. Daushvili/

Biannual Environmental Monitoring Report

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

Reference	Requirement	Action to date	Action required/comment
Sea water pollution	<p>The construction activities must be accomplished only in dry weather to avoid the pollution of the water currents;</p> <p>The construction activities must be accomplished by observing relevant safety measures; the materials and waste must not be in uncontrolled way over the site, etc.</p> <p>Locating the construction machinery and other equipment at a distance of at least 50 m from surface water bodies (where possible. If this seems impossible, taking permanent control and safety measures to avoid water pollution);</p> <p>Prohibition of washing of vehicles and other machinery near surface water bodies - The vehicles and equipment are recommended to wash by using commercial washing services;</p> <p>Limiting fueling and/or maintaining the vehicles/equipment to the specially designated places only;</p> <p>The equipment and vehicles should be maintained in good working order to avoid the risk of spills of fuel/lubricants;</p> <p>Expedient materials and waste</p>	<p>All works has been accomplished only in dry weather working conditions. All construction materials and machinery has been located 50 M away from surface of the water. All equipment and machinery has been maintained in good working conditions. The construction waste has been accumulated in special areas away from the water bodies and removed buy authorized personal only. On site environment specialists are maintaining visual monitoring for oils spills and equipment conditions, no accidents has been detected. Personal is been instructed on environment and safety issues rules and regulations.</p>	<p>Monitoring of the Surface water mitigation level is been carried out by contractor environmental specialist on every day basis and by supervising environmental specialist</p> <p>Regular check-up and inspection; Laboratory control – as necessary (in case of oil spills).Sea water Laboratory test are taken in every three month (Laboratory tests has been taken on 28.12.2013 and new on 25.06.2014 During this period no problems has been detected</p>

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	<p>management;</p> <p>The waste generated during the works will be collected and temporarily stored at the specially designated places, distanced from the water bodies;</p> <p>In case of fuel/oil spills, locating and spilt material and cleaning the polluted area immediately to avoid long soil pollution ;</p> <p>Installing drainage systems around the areas with the potential pollutants of surface flows (e.g. along the perimeter of ground or construction materials storage areas);</p> <p>Instructing the personnel on the environmental and safety issues.</p>		
<p>Pollution of underground waters</p>	<p>Control for the Pollution of underground waters must be maintained in the areas like: Construction camp - Material and waste storage areas; Construction sites, Gas station.</p> <p>Taking all measures to avoid the deterioration of the seawater quality.</p> <p>Taking all measures to avoid the deterioration of the ground quality.</p>	<p>All works has been accomplished only in dry weather working conditions.</p> <p>All construction materials and machinery has been located 50 M away from surface of the water. All equipment and machinery has been maintained in good working conditions. The construction waste has been accumulated in special areas away from the water bodies and removed buy authorized personal only. On site environment specialists are maintaining visual monitoring for oils spills and</p>	<p>Monitoring of the Surface water mitigation level is been carried out by contractor environmental specialist on every day basis and by supervising environmental specialist</p> <p>Regular check-up and inspection;</p> <p>Laboratory control – as necessary (in case of oil spills). Sea water Laboratory test are taken in every three month (Laboratory tests has been taken on 28.12.2013 and new on 25.06.2014 During this period no problems has been detected</p>

Biannual Environmental Monitoring Report

		equipment conditions, no accidents has been detected. Personal is been instructed on environment and safety issues rules and regulations.	
Noise	<p>The equipment and vehicles should be maintained in good working order;</p> <p>Driving the vehicles at optimal speeds;</p> <p>Instructing the personnel (particularly, the drivers of vehicles and techniques);</p> <p>Registering and responding to grievances (if any);</p> <p>Driving the vehicles along optimal routes and at optimal speeds;</p> <p>Switching off the vehicle drives or running at minimal speed when the vehicles are not used;</p> <p>Carry out noisy operations during day time;</p> <p>Reaching preliminary agreement with the population living near the road about particularly noisy works.</p>	On site Environmental specialists are conducting visual control (on regular basis) of soil quality, laboratory control of soil quality (in case of spills) no oil spills has been detected, technical check-up of machinery.	Regular monitoring has been carried out to provide guaranteed protection of the underground water quality.
Dust	Watering the non-asphalted ground or bare ground surfaces once in four hours on working days and in dry or windy weather;	All vehicles are maintained in good working conditions. Drivers are instructed to follow the limitations of driving speed (On construction	Monitoring of the construction process noise level is been carried out by contractor environmental specialist on every day basis and by supervising

Biannual Environmental Monitoring Report

<p>Observing the rules for storing the fill construction material to avoid their dusting in windy weather;</p> <p>Covering the lorries with tarpaulin when transporting loose materials, when there is probability of dusting;</p> <p>Taking necessary precautions (e.g. avoiding throwing the materials from heights when unloading them) to avoid excess dust emission during the earthworks and loading and unloading the materials;</p> <p>Driving the vehicles at optimal speeds;</p> <p>Washing the vehicle tires (recommended to use commercial services for this purpose);</p> <p>Instructing the personnel (particularly, the drivers of vehicles and techniques);</p> <p>Registering and responding to grievances (if any);</p> <p>Driving the vehicles along optimal routes and at optimal speeds;</p> <p>Switching off the vehicle drives or running at minimal speed when the vehicles are not used.</p>	<p>site 10 kph, 30 kph on main roads). All noisy operations has been carried out during day time. No grievance has been detected concerning noisy works.</p>	<p>environmental specialist. Regular control (particularly during much “noisy” operations);</p> <p>Measuring (In case of grievance); During this period no grievance or problems has been detected.</p> <p>Technical check-up of machinery before works. The nearest receptor (residential houses) is approximately 400-500 m away from construction site, drivers are maintaining the safe speed limits 30 kph on main roads and 10 kph on construction site, there for no noise complains has been detected.</p>
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Biannual Environmental Monitoring Report

<p>Vibration</p>	<p>The equipment and vehicles should be maintained in good working order;</p> <p>Driving the vehicles at optimal speeds, particularly in the settled areas;</p> <p>Instructing the personnel (particularly, the drivers of vehicles and techniques);</p> <p>Registering and responding to grievances (if any);</p> <p>Driving the vehicles along optimal routes and at optimal speeds;</p> <p>Switching off the vehicle drives or running at minimal speed when the vehicles are not used;</p> <p>Carry out noisy operations during day time;</p>	<p>Watering of the roads has been carried out by the contractor on every day basis. All lorries has been covered buy tarpaulin to avoid dusting. Drivers are instructed to follow the limitations of driving speed (On construction site 10 kph, 30 kph on main roads). No grievance has been detected.</p>	<p>Monitoring of the construction process soil mitigation level (including dusting problems) is been carried out by contractor environmental specialist on every day basis and by supervising environmental specialist.</p> <p>Regular check-up; Inspection after completion of works; Laboratory control – as necessary (in case of oil spills). Material and waste storage areas are indicated and isolated. During this period no problems has been detected.</p>
<p>Air Pollution of emissions</p>	<p>The equipment and vehicles should be maintained in good working order;</p> <p>Driving the vehicles along optimal routes and at optimal speeds; Switching off the vehicle drives or running at minimal speed when the vehicles are not used.</p> <p>Instructing the personnel before the start-up of the works.</p>	<p>All vehicles are maintained in good working conditions. Drivers are instructed to follow the limitations of driving speed (On construction site 10 kph, 30 kph on main roads). All noisy operations have been carried out during day time. No grievance has been detected concerning vibration.</p>	<p>Monitoring of the construction process noise level is been carried out by contractor environmental specialist on every day basis and by supervising environmental specialist. Regular control (particularly during much “noisy” operations);</p> <p>Measuring (In case of grievance); During this period no grievance or problems has been detected.</p>

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			<p>Technical check-up of machinery before works. The nearest receptor (residential houses) is approximately 400-500 m away from construction site, drivers are maintaining the safe speed limits 30 kph on main roads and 10 kph on construction site, there for no noise complains has been detected.</p>
<p>Disturbance of the seawater during installation of tetrapods</p>	<p>During the works to level the seabed, permanent seawater analyses are needed to identify the degree of the water turbidity;</p> <p>If the degree of the water turbidity is in excess of the admissible limit (25 gr/l), the works must be stopped and relevant corrective measures must be taken.</p>	<p>Monitoring of the Increased seawater turbidity level is been carried out by contractor environmental specialist on every day basis and by supervising environmental specialist.</p> <p>Permanent visual control;</p> <p>Identifying the degree of turbidity through analysis (in every 4 hrs. During the work). Upon intensive commencement of works in the sea, water testing has been conducted together with turbidity control, no problems has been detected.</p>	<p>During installation of TTP units environmental specialists are conducting visual control, taking turbidity analysis. No increased seawater turbidity has been detected.</p>