Project Number: Sustainable Urban Transport Investment Program - Tranche 4
LOAN NUMBER 3273-GEO

Reporting period: July - December 2019

GEORGIA: GEORGIAN SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM - Tranche 4

(Financed by the Asian Development Bank)

Prepared by: Ketevan Papashvili, Environmental Specialist for ADB projects
Environmental and Resettlement Unit, Municipal Development Fund (MDF)
Tbilisi, Georgia

Endorsed by: Elguja Kvantchilashvili, Head of Environmental and Resettlement Unit
Municipal Development Fund (MDF)
Tbilisi, Georgia

December 2019

Table of Contents

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	Sustainable Urban Transport Investment Program
IA	Implementing Agency
IEE	Initial Environmental Examination
MDF	Municipal Development Fund of Georgia
MFF	Multi-tranche Financing Facility
MEPA	Ministry of Environmental Protection and Agriculture
MoRDI	Ministry of Regional Development & Infrastructure
SSEMP	Site-Specific Environmental Management Plan

1 INTRODUCTION

1.1 Preamble

1. This report represents the Semi - Annual Environmental Monitoring Review (SAEMR) for GEORGIAN SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM – TRANCHE 4 - **Coastal Protection Batumi project**. Contract No: P42414-SUTIP4-ICB-01-2016 and Amendment N2, N3.

2. This report is the sixth (6) EMR for the project, since the 2017.

1.2 Headline Information

3. Black Sea coast playing a significant role in economics of Georgia, cultural and tourist development as well. Coastal improvement is one of the priorities among other infrastructural projects, which will facilitate the future development of the City Batumi and Adjara region. 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. Recently several significant programs, financed through state budget, loans and grants, have been implemented with this regard.

4. The Sustainable Urban Transport Investment Program (SUTIP) is financed by ADB under a multi tranche financing facility (MFF), and is aimed at promoting a sustainable, integrated, socially-affordable and cost-efficient urban transport system in cities of Georgia, to energize the economy and improve the quality of life of citizens. Projects involve rehabilitation and repair of existing infrastructure, provision of new facilities and capacity building.

5. SUTIP - Tranche 4 was developed as the government's response to the transportation problems in urban areas, which include large traffic volumes causing increasing delays, as a result of previous under-investment in infrastructure maintenance and expansion. Tranche 4 was signed on 26 October 2015, and declared effective on 8 January 2016. Inception Mission was fielded on 26 January to 9 February 2016. Batumi coastal protection works contract was awarded in December 2016, and project implementation is ongoing.

6. SUTIP - Tranche 4 comprises (i) urban infrastructure improvement, including one subproject: Batumi Coastal Protection; (ii) institutional strengthening, including management information system for MDF; and (iii) project management facility, including incremental administration and consulting services for audit, safeguards monitoring, and feasibility studies and detailed engineering design for sustainable urban transport projects. The government, through the Ministry of Finance, has submitted on 15 April 2015 the periodic financing request for Tranche 4, requesting a loan of $20 million from ADB's ordinary capital resources. These investments will improve the urban environment, strengthen economic and tourism development, and regional integration.

7. The Municipal Development Fund of Georgia (MDF) is the executing agency of the program, and is responsible for the general coordination and implementation of projects, for negotiating with ADB and with appropriate ministries and agencies of the Borrower. MDF is directly responsible for planning, designing, civil works on construction and rehabilitation of all subprojects in the frame of program.

2 PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

8. Coastal improvement is one of the priorities among other infrastructural projects, which will facilitate the future development of the Batumi City and region. The proposed project is aimed at protecting the Batumi coast against erosion, which is affecting the coastline southwest of Batumi, over a length of about 5 km. Along this section a number of properties has been lost already in the past. Without adequate protection measures coastal erosion will continue and as a consequence the investment climate for tourism development could be negatively influenced.

9. The main objective of the proposed project is to protect the Batumi coast against erosion. The coastline southwest of Batumi is affected by erosion over a length of about 5 km. Along this section a number of properties has been lost already in the past. Without adequate protection measures coastal erosion will continue at the airport area and at Adlia (village south of Batumi) and might even affect the beaches and the coastline of Batumi. As a consequence, the investment climate for tourism development could be negatively influenced.

10. The evaluation of the alternatives to protect the coast against the erosion affecting the southern section of the littoral has shown that a soft intervention, featuring recirculation of the sediment between the northern section of the littoral (where it accumulates due to natural transport pattern) and the southern portion (from where it is removed due to erosion), is the most efficient way to protect and restore the beach.

11. Therefore, the main intervention aiming at stabilizing this portion of the Batumi coastline features artificial nourishment in the southern portion of the littoral, just north of the airport, spread over a beach length of approximately 2,000 m, using material taken from the northern part of the coastline (where beach accretion is occurring).

12. The interventions for the protection of the coast are listed here below:

- Beach nourishment of the eroded sediment along the coast for about 1,680m, in the southern beach (approx. 120,000 m3);
- Adapting the revetment to the existing local conditions for 1,750m;
- Safeguard of greenery and boulevard for about 1,750m;
- Yearly possible nourishment maintenance (50,000m3);
- A Chorokhi river monitoring program providing the information needed to analyze the morphology and hydrology of the Chorokhi river and to study the shape of river mouth that could increase the deposit of the sediment from the river towards north and that could minimize the loss in the canyon of the sediments transported by the river.

13. The following maps show the general location of the Project activities:

Figure 1: General location

Figure 2. Site location

14. In addition to sediment recirculation, the beach in the South, suffering erosion, will also be protected by a revetment and enlarged over a stretch about 2 km long. Both sediment from recirculation (gravel) and sediment from excavation (needed to build the revetment) will provide nourishment to this southern portion of the littoral. In particular, in this first intervention, the gravel material from recirculation (approximately 30,000 m3) will be used to form the toe of the new enlarged beach.

Figure 3. Site Location with GPS

x=41 37.0371'N, y=41 35.0911'E	x=38.5445'N, y=41 37.1968'E
x=41 37.1117'N, y=41 35.1117'E	x=41 38.5392'N, y=41 37.2038'E
x=41 36.5740'N, y=41 35.0988'E	x=41 38.5427'N, y=41 37.2091'E
x=31 36.5842'N, y=41 35.0637'E	x=41 38.5276'N, y=41 37.2190'E

15. The Environmental Category of the proposed project for Batumi coastal protection is B (ADB's Safeguard Policy Statement, 2009), which refers to projects not having significant irreversible or permanent negative environmental impacts during or after construction. For this category of Projects ADB requires the preparation of Initial Environmental Examination (IEE).

2.2 Project Contracts and Management

16. On October 16, 2014 the contract between MDF and Technital, regarding the "Consulting services for- Batumi Coastal Improvement project", was signed. The Contract Agreement for Civil works, with Struijk Group as Construction Contractor, was signed on 15 November 2016.

17. Commencement date for civil works is defined as February 1, 2017. Before starting any construction activities, Construction Contractor was required to develop Site Specific Environmental Management Plan (SSEMP), which was developed and approved as by Supervision Company and MDF, as well as by ADB.

18. The main institutions involved in IEEs/EMPs/SSEMPs implementation and monitoring, are the executing agency (EA) - MDF, the Supervision Consultant (SC)- Technital, the Construction Contractors -Struijk and to a lesser extent the Ministry of Environmental and Natural Resources Protection and Municipal Authorities. EA (MDF) and SCs are responsible for ensuring monitoring of the projects' implementation at the construction stage. Ministry of Environmental and Natural Resources Protection has the authority for periodic audits but should not be considered as a party responsible for monitoring according to this IEE and EMPs.

19. The supervisor company (SC), of works commissioned by MDF is responsible to establish strong field presence in the Project area and keep a close eye on the course of works. Along with ensuring consistency with the design and ensuring quality of works, the supervisor is mandated to track implementation of EMP/SSEMP by the contractor and reveal any deviations from the prescribed actions.

20. The Consultant's staff, as outlined within the Consultant's proposal, consists of an international Project Team, formed by TECHNITAL and a national team of experts, formed by Saunders Group Ltd.

21. With respect to this stage, the Supervision Team falls conveniently into two groups as follows (Table 1):

Table 1: Supervision Team Composition

International	National
Coastal Management Specialist/Team Leader	Coast Protection Engineer/Deputy TL
Coast Protection engineer	Hydraulic engineer
Geotechnical Engineer	Geotechnical Engineer
Environmental specialist	Sea Hydrologist
	Environmental specialist
	Quantity surveyor

22. As foreseen by the Contract No. SUTIP2/C/QCBS/7-2013 between MDF and Technital, dated October 16th 2014, for the Environmental supervision for the construction site (4.2 Construction Supervision, (a) International Team, Non Key Experts, Environmental Specialist) the following tasks and responsibilities are requested:

- Coordination and liaison with Government/Employer;
- Reports preparation;
- carry out environmental monitoring and management of project implementation;
- help ensure the implementation of environmental management practices at each stage of the construction;
- develop an environmental auditing protocol for the construction period, regularly supervise the environmental monitoring;
- submit periodic reports based on the monitoring data and laboratory analysis reports;
- Implementation of environmental mitigation measures during construction period.

23. Construction Supervision Company is preparing quarterly progress reports, which cover the implementation of the SSEMP, discrepancies from the SSEMP and list all HSE relevant incidents and accidents that occur during the implementation; Submits periodic reports based on the monitoring data and laboratory analysis.

24. The key experts mobilized at the SC for the supervision stage are listed in the following Table 2.

Table 2: Key experts mobilized at the SC

International Key expert for the supervision Stage			**Contacts**	**Mail**
K1	Fernando Bersano	Team Leader/Senior civil engineer	-	fernando.bersano@technital.it
K2	Luca Beghini	Coastal Protection Engineer	-	Luca.Beghini@technital.it
K3	Cristina Zago	Environmental Specialist	571158206	Cristina.Zago@technital.it
National Key expert for the supervision Stage				

K4	Andrew Webb	Quantity Surveyor	599992901	andrew@sggeorgia.com
K5	Alexandre Abzianidze	Environmental specialist	579060199	alexandre@sggeorgia.com
K6	Malkhaz Vardosanidze	Site Inspector/Quality Control specialist	579060155	malkhaz@sggeorgia.com
K7	Mamuka Shaorshadze	QHSE Manager	595116071	m.shaorshadze@gmail.com
K8	Zeinab Tsintsadze	Focal Person	557331804	-

25. A Non-Compliance Notice has to be issued to the contractor if the SC requires action to be taken. The contractor is required to prepare a corrective action plan which needs to be implemented by a date agreed with the SC.

26. Construction Contractor (CC) is obligated to follow EMP/SSEMP and good construction practice. In order to meet this obligation, a contractor has established environmental management team and procedures. The Contractor has appointed an Environmental Manager (EM) – Mamuka Shaorshadze, which is a member of the construction management team based on site for the duration of the contract.

27. Duties and responsibilities of the Environmental Manager of the Construction Contractor are:

- To Identify all Environmental Aspects and Impacts for each activity;
- To ensure compliance with all project standards, statutory requirements and permit conditions;
- To lease with government authorities on environmental issues;
- To coordinate Environmental information flow between Client and Suppliers/Sub-Contractors;
- Implementation of, and adherence to, all pre-construction, pollution prevention, waste management, water supply, aggregates, fauna and visual management requirements outlined in this plan;
- Ensuring relevant permits are in place for site specific activities;
- Implementation and supervision of the monitoring program;
- Record keeping and reporting on a daily basis to the Project Manager;
- Maintenance of records;
- Ensure Training Department presents well founded and appropriate environmental training;
- To plan and ensure implementation of all monitoring activities and evaluates results;
- To ensure any corrective or preventative action is implemented in wise time;
- Keep Project personnel fully informed of all environmental concerns and issues;
- Close supervision of Sub-Contractors.

28. Thus, key responsibilities of the Contractor are preparation of the Site-Specific Environmental Management Plan (SSEMP) for approval by the Employer (EA) prior to the Contractors taking possession of the construction site; Ensure that the SSEMP is implemented effectively throughout the construction period; Carry out the monitoring and mitigation measures set forth in the IEE/EMP/SSEMP; Establish an operational system for managing environmental impacts; Allocate the budget required to ensure that such measures are carried out. Construction contractor is responsible to prepare monthly progress reports on SSEMP implementation, which should contain information on the main types of activities carried out during the reporting period, status of any

clearances/permits/licenses which are required for carrying out such activities, mitigation measures applied, and any environmental issues that have emerged in relations with suppliers, local authorities, affected communities, etc.

29. MDF is responsible for general implementation of all safeguards tasks and guarantee that potential adverse environmental impacts arising from the Projects are minimized by implementing mitigation measures presented in the Initial Environmental Examination (IEE) or SSEMP, as applicable.

30. Management of safeguards issues is carried out by the MDF through Environmental and Resettlement Unit, established in October 2014. From that time, number of Environmental and Resettlement team members has increased from 6 to 12 and currently consists of: Head of Unit, 4 environmental safeguards specialists, one social and gender specialist, 4 resettlement specialists. Since 2018, there is no ADB Environmental Consultant, but an Environmental Specialist is responsible for ADB projects. Until October 2014, Environmental and resettlement safeguards team was consisting of 3 environmental safeguards and 2 resettlement specialists, one of which was the ADB's national consultant on resettlement issues. Environmental and Social Safeguards team had a Team Leader who was an advisor to Executive Director of MDF on environmental and social safeguards issues.

31. The Environmental and Resettlement Unit is involved in addressing of environmental and social safeguard issues throughout the entire projects' cycles. The Environmental and Social Specialists of the MDF, are responsible for management of the environmental and social aspects associated with development of all donor funded projects for which MDF is the responsible Executing Agency (EA). The Environmental Specialist of the MDF supervises ADB projects, review the IEEs/EIAs, EMPs, and SSEMPs of projects and carries out supervision of the construction performance based on approved EMPs, EIAs, and environmental standards in accordance with ADB "Safeguard Policy Statement" (2009) requirements' and acting Georgian Legislation.

32. MDF ensures availability of all environmental information and facilitates environmental supervision of the project. The MDF's local environmental specialist's responsibilities in respect of implementation of the IEE/SSEMP, are to: ensure that all relevant IEE/SSEMP requirements (including environmental designs and mitigation measures) are duly incorporated into the project bidding documents; Assist Contractors to obtain necessary permits and/or clearance, as required, from any relevant government agencies (NEA, etc.); Ensure that all necessary regulatory clearances are obtained before commencing any civil work on the project; Ensure, that contractors have access to the EMP and IEE report and understand their responsibilities to mitigate environmental problems associated with their construction activities and facilitate training of their staff in implementation of the EMP; Approve the Site-Specific Environmental Management Plan (SEMP) prepared by the Contractor before he takes possession of construction site; Time-to time monitor the contractor's implementation of the SEMP in accordance with the environmental monitoring plan by conducting site monitoring visits; The MDF through its Local Environmental Consultant, reports to the ADB in every 6 months on the status of environmental compliance of construction works by preparing semi-annual Environmental Monitoring Reports. In case unpredicted environmental impacts occur during the project

implementation, prepare and implement as necessary an environmental emergency program in consultation with relevant government agencies and ADB.

2.3 Project Activities during Current Reporting Period

33. The major activities which have been carried out during the current reporting period (July - December 2019) are provided below:

- General excavation and backfilling for revetment;
- Supply of latest rocks in Stockpile;
- Placement of rocks;
- Conducting reinforcement and concrete for Crown Wall, Beach Accesses and Outfalls;
- Small demolition works reinforced concrete works;
- Earthworks for Boulevard;
- Supply and placement compacted soil and granulate for Boulevard;
- Boulevard activities;
- Sediment recirculation
- Monitoring Site-walk-, Air-, Water turbidity- and Noise tests;
- Topographic- and Bathymetric Survey
- Beach monitoring, sediment sampling and analysis;
- Chorokhi river monitoring and 2D-modeling activities;
- Preparing reports and maintains safety precautions on site by our Safety specialist.

Physical and financial progress by December 2019:

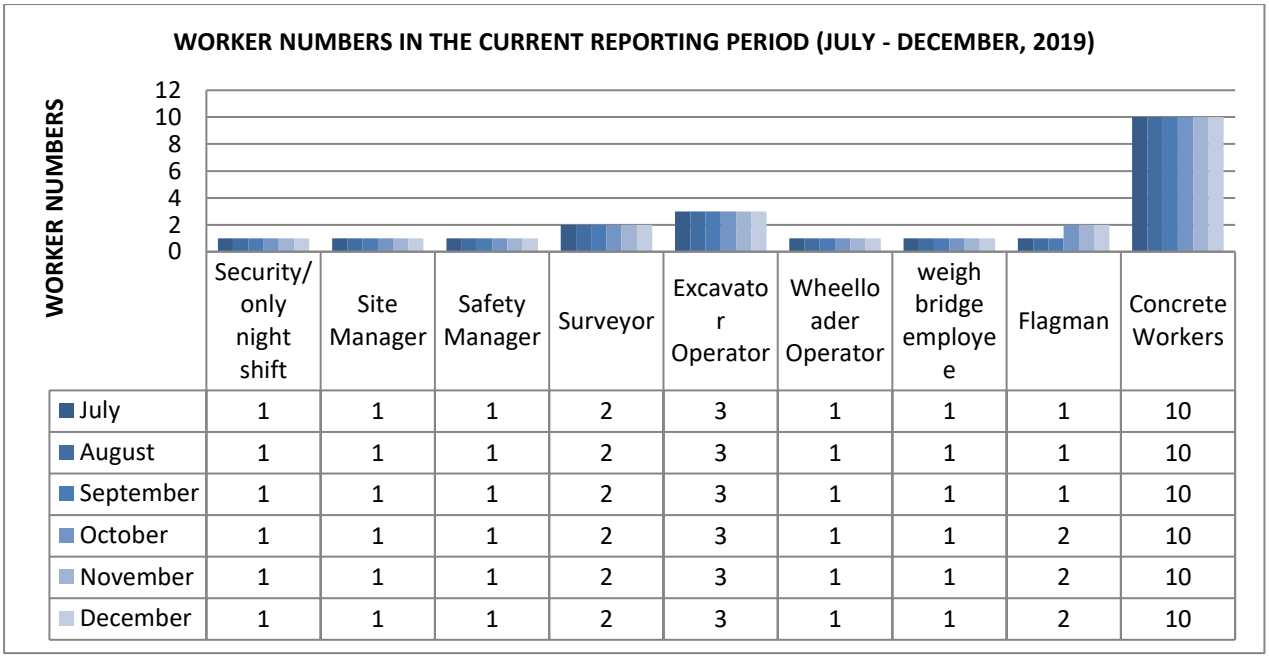
Activities according contract:

- The actual physical progress for the contract works is: 97.0 %;

- The actual financial progress included submitted IPA-27 is: 95 %;

- The financial certified progress (IPC 1 until 31) for the contract works is: 93 %.

34. Details of worker numbers (maximum, minimum) during current reporting period is outlined by the chart provided below:



	Security/ only night shift	Site Manager	Safety Manager	Surveyor	Excavator Operator	Wheelloader Operator	weigh bridge employee	Flagman	Concrete Workers
July	1	1	1	2	3	1	1	1	10
August	1	1	1	2	3	1	1	1	10
September	1	1	1	2	3	1	1	1	10
October	1	1	1	2	3	1	1	2	10
November	1	1	1	2	3	1	1	2	10
December	1	1	1	2	3	1	1	2	10

35. During the reporting period, the following new significant activities have been commenced under the project:

- Studies, analyses and monitoring of Chorokhi River:
- The following maps show the general location of the Project activities
- Historical Data Collection, Topo-Bathymetric Survey, Geotechnical Survey

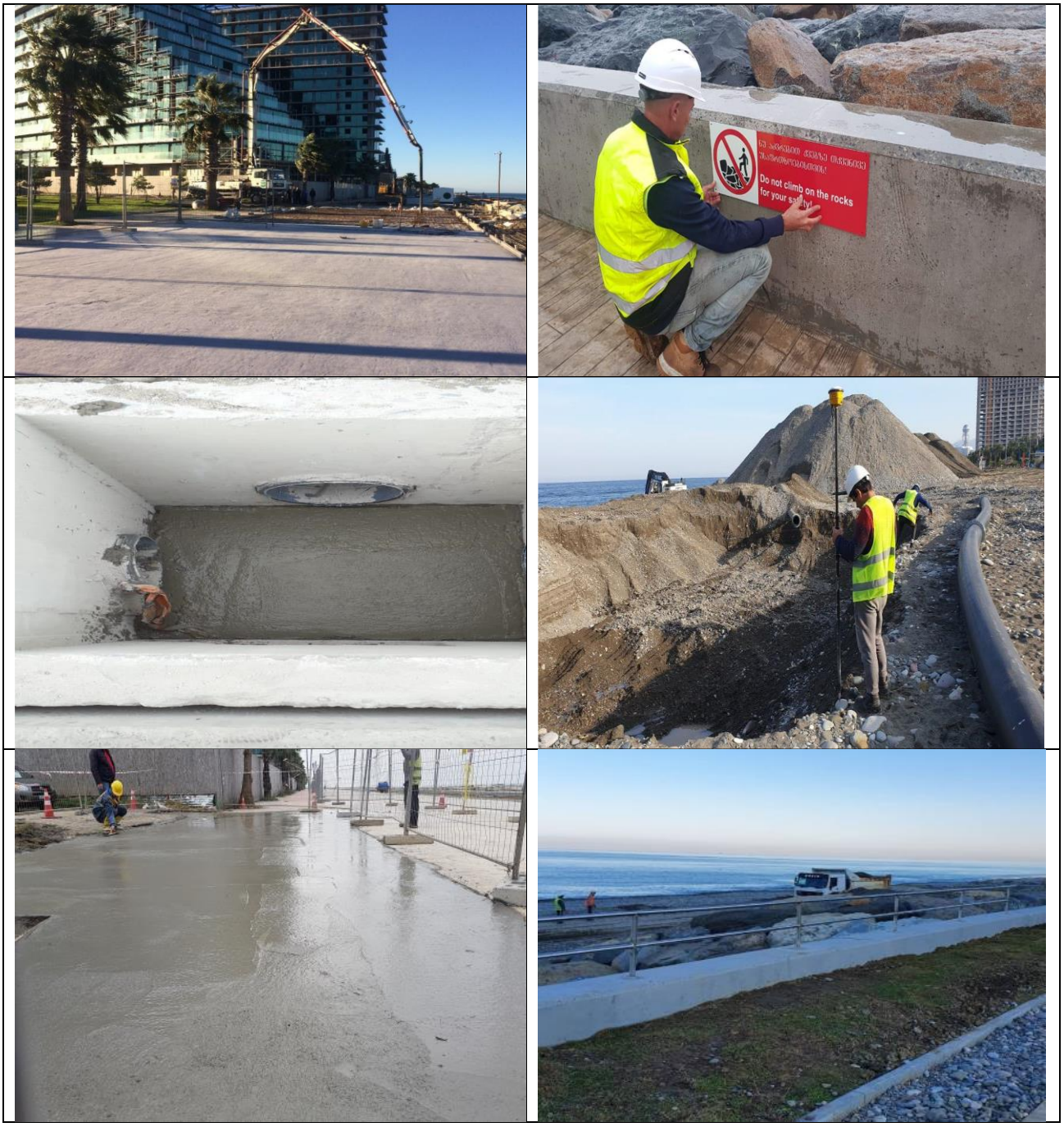
GENERAL INVESTIGATION ACTIVITIES:

- Topo-Bathymetric Survey (08.07.2019 – 05.12.2019);
- Geotechnical Survey (08.07.2019 – 28.07.2019);
- Monitoring (01.07.2019 – 19.12.2019);
- Sediment Samples Collection (04.07.2019 – 02.12.2019);
- 2D model analysis (26.07.2019 – 19.12.2019);
- Coordination and reporting (12.07.2019 – 06.12.2019).

- **Concrete pouring and reinforcement arrangement works**
  - Duration of pouring and reinforcement activities: 01.07.2019 – 24.11.2019
- **Rock supply and placement works**
  - Duration of rock supply and placement activities: 01.07.2019 – 27.07.2019

36. Where the revetment and crown wall are interrupted for building these accesses, stability of the shoreline against both - wave and earth loadings are to be supported by a proper retaining structure consisting in a 4 m reinforced concrete wall founded on steel sheet-piles, placed along the crown wall line.

37. Construction of 10 beach accesses along the shoreline with interruption of the revetment. In these cases, the stability is assured by a proper retaining structure consisting in an approx. 4 m reinforced concrete wall founded on steel sheet-piles, placed along the crown wall line.



2.4 Description of Any Changes to Project Design

39. In the past two years the situation has changed sharply and with intensity that has been completely different from the experience of the last 15 years.

40. Sufficient magnitude erosion has been occurred during 2015-2017 years on Batumi beach, which needed to perform the additional works (back filling of the boulevard) asked by local government Municipality (Batumi) with MDF confirmation, and changes of the stone sizes

from 50 mm to 7000 mm because small stones sizes would not provide the beach stabilization, considering of all these circumstances it was required the design changes. The modifications of the water depth and of the slope of the coastline just after the breakwater in north direction have been very important and were extended for approximately 2 km. The modification has been so important that the original sections could not be done any more and that the new solution should include also the reconstruction of the boulevard.

41. In order to avoid any further damages, the Engineer, in agreement with the Client (MDF) and its Consultant, took the decision that it is immediately necessary to bring new material in the eroded portion of the coastline approximately equal to the volume lost in the past two years. This volume that is composed by gravel and sand with the grain size distribution defined by the Engineer has been dumped in the period between beginning of July and end of August 2017.

42. In parallel, the Engineer has proposed a final solution. The Client on May 17th 2017 requested to the Engineer to develop the updated detailed design of this solution. The solution has been further discussed with MDF, Consultant and with the Construction Contractor and the details have been agreed on the meeting held in Batumi on September 22nd, 2017.

43. The MDF asked Technital to revise the original design, including IEE and SSEMP in order not only to restore the protective function of the revetment but also to incorporate the actual embankment as integral part of the design. For this reason, the design revision, have taken into account the revetment, nourishment and boulevard.

44. On 6th of December 2017 the amendment has been signed between Technital and MDF with the approval of the “Adaptation design for Batumi coastal protection”. SC submitted the revised design to the MDF by end of December, 2017. The revised design and other documentations (method statements) were approved by MDF in February, 2018. IEE was updated accordingly to ADB SPS 2009 together with revised detail design, which was agreed with MDF in March, 2018. By ADB updated IEE was approved in May, 2018. Updated IEE was disclosed at MDF’s web-page: http://mdf.org.ge/?site-lang=en&site-path=documents/&id=396. SSEMP was also updated and approved as by MDF as well as by ADB prior to construction activities start.

3 ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General Description of Environmental Safeguard Activities

45. Based on the EMP/SSEMP requirements, monitoring measures of project includes construction site supervision, verification of permits, monitoring of compliance of the contractors' performance and specific monitoring of environmental impacts like noise, dust, soil contamination, landscape structure, construction waste, flora and fauna, water pollution, air emissions and etc. conducted by Contractor's and Engineer's environmental management specialists.

46. The Construction Contractor's QHSE Manager - Mamuka Shaorshadze is: submitting environmental monitoring reports on a monthly basis; Coordinating community relations issues through acting as the Contractor's community relations focal point (proactive community consultation, complaints investigation and grievance resolution); Establishing and maintaining site records of:

- Weekly site inspections using check-lists based on SEMP;
- Environmental accidents/incidents including resolution activities;
- Environmental monitoring data;
- Non-compliance notifications issued by the SC;
- Corrective action plans issued to the SC in response to non-compliance notices;
- Community relations activities including maintaining complaints register;
- Monitoring reports;
- Routine reporting of SEMP compliance and community liaison activities;
- As per reporting to the Employer's Engineer of environmental incidents/spillages including actions taken to resolve issues.

47. Local environmental specialist of Supervision Company Alexandre Abzianidze conducts site-monitoring visits 4 times per month and supervises and monitors implementation of the SSEMP during construction activities.

48. The international environmental expert of SC, Cristina Zago, has prepared the quarterly reports. In the reporting period she visited the camp site from 04.11.2019 to 07.11.2019. The international expert receives regularly mails, reports, memo and when necessary she cooperate with MDF's local consultant, SC (Alexandre Abzianidze) and CC (Mamuka Shaorshadze, Nikoloz Beruchashvili).

49. Local environmental specialist Alexandre Abzianidze was recruited by the SC in February, as well. He conducts site-monitoring visits 2 times per month and supervise and monitor implementation of the SSEMP during construction activities.

49. MDF's Environmental Specialist (Ketevan Papashvili) ensures that the Contractors – CC and SC understand what is to be done and how to rectify and address any environmental issues rose during project implementation process. MDF's Environmental Specialist has regularly been performing monitoring of ongoing activities with close cooperation with env. specialists of SC and CC companies, by mailing, site monitoring visits and meetings.

Coordination with the Contractor and SC has been performed by checking the Reports (SSEMP, monthly, HSE and etc.).

3.2 Site Audits

50. Regular inspection and monitoring of construction sites under Batumi Coastal Improvement Project were conducted by ESs of CC, SC and PIU. The schedule of joint inspections and summary of audits are provided in the Table **3** below.

Table 3. Summary of site audits

Date of visit	Name of Company	Auditors name,	Purpose of audit	Summary of any significant findings	Cross reference to Audit report
Continuously during reporting period (July – December 2019)	Struijk Group Georgia	Mamuka Shaorshadze	Compliance with HES requirements	• Poor housekeeping at site toilet • Safety issues on construction sites • PPE usage on construction sites • Unplanned discharges (Inert waste-washed concrete) on the site	Non-compliance reports are included in the Contractor's monthly report. In accordance with Contractor report all identified non-conformances were resolved.
Weekly bases	SC	Alexander Abzianidze	Compliance with HES requirements	• Poor housekeeping • Lack of drip treys • No fencing of partially working area	Non-compliance reports N10, N11, N12, N13, N14 Corrective Action Reports: 19,20,21,22,23,24
Semi-annual	MDF	Ketevan Papashvili	Compliance with HES requirements	• Opening the beach during summer season 2019	Bi-Annual N6

3.3 Issues Tracking (Based on Non-Conformance Notices)

52. Identification of problematic issues and non-compliance notice during site inspections is the responsibility of Environmental Specialists of Construction and Supervision Companies. During reporting period, the number of site visits has been implemented by environmental specialists of Construction and Supervision Companies in order to check environmental compliance of construction works.

53. In case of any deviations of EMP/SSEMP requirements corrective actions and mitigation measures are applied. All mitigation measures during pre- and construction phases of SPs are implemented by construction contractors according to EMP/ SSEMP.

54. Non-compliances observed during the reporting period, corrective actions required and their current statuses are provided in the Table 4 below:

Table 4: Summary of site visits and non-compliances during July - December, 2019

Date of submission	Description of Non-Compliance	Area	Corrective action required	Performance Date of Corrective actions
21.08.2019	Not proper housekeeping is set on the construction site, especially near the open sections. No designated area (no wastes skips, containers, no environmental signs "Keep clean") nearby the open sections. Household wastes (napkins, empty cigarette boxes, plastic bottles) were scattered over there.	Construction site	On 27th of August several environmental signs "Keep clean" have been installed near the temporary opened sections of the boulevard and waste bin has been provided by controlling with Construction Contractor "Struijk Group Georgia".	Improved 27.08.2019
03.09.2019	The tourists and locals were coming to the prohibited area (second access). The gate was opened and the flagman was not on the proper place to control the perimeter.	Construction site	Construction Contractor "Struijk Group Georgia" has been take action to close the main gate (second access) and only Michel (site manager), Berika (surveyor) and Sulkhan (flagman) have a key. Trucks and people who want to come on site have to contact them. So no one has a permission to enter in this place except these people. The gate is closed on daily bases. Also the corridors which connect the locals and the tourists to the beach accesses are well closed and tied.	Improved 12.09.2019
12.09.2019	Barbed wire is installed near the staircase on the construction area for purpose to abstain the tourists, humans	Construction site	Construction Contractor "Struijk Group Georgia" has been took the corrective action to cut the barbed wire installed near the staircase	25.09.2019

	from access. Using of barbed wire for that purpose on the construction site is not allowed. High risks of the humans harms.		which was holding the fence on the construction area. Special HSE induction conducted to the workers and flagmens on site.	
25.09.2019	Barbed wire is installed near the staircase on the construction area for purpose to abstain the tourists, humans from access. Using of barbed wire for that purpose on the construction site is not allowed. High risks of the humans harms.	Construction site	Construction Contractor "Struijk Group Georgia" has been took the corrective action to cut the barbed wire installed near the staircase which was holding the fence on the construction area. Special HSE induction conducted to the workers and flagman's on site.	Improved 25.09.2019
16.10.2019	Unsafe lifting operation. Unloading and storing the pipes by the excavator is not acceptable, no riggers are available with the ropes for the manipulation actions. Manual handling of the manipulation is not safe, high risk of the stacking, personal injuries. No caps are provided for the pipes.	Construction site	1. We (Construction contractor – Struijk Group Georgia) provided short arm excavator because of not enough surround space during the rotation of the pipe on the temporary storage. The high up lift crane is too big for this job and not stabile. So we are operating very slowly, very accurately and 6 persons (4 flagmen, me and senior site manager) controlling every movement and always in touch each other during lifting and unloading process; 2. Manual handling of the manipulation during unloading process of the pipes has been changed with special ropes (both sides); 3. Stored pipes holes have been covered with polyethylene layers and with sand-pebbles; 4. The unloading process with excavator and trailer always covered with safety tape, Traffic cones and controlled with flagmen and with QHSE Manager. 5. Every personnel, during unloading process of the pipes are instructed on daily bases and conducted special HSES training for working in the safe environment.	Improved 16.10.2019

3.4 Trends

55. This will be done during the next reporting period as MDF and the SC have not/could not collect statistics based on graphs and tables provided in New Manual's Environmental Safeguards Issues Tracing Workbook.

3.5 Unanticipated Environmental Impacts or Risks

56. No any unanticipated environmental impacts and risks have been occurred during the reporting period.

4 RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted during Current Period

MDF requires the Construction and its Supervision Companies to implement construction activities in accordance with the environmental management plan, according to which SSEMP was developed.

59. Based on the EMP/SSEMP requirements, monitoring measures of projects includes construction site supervision, verification of permits, monitoring of compliance of the contractors' performance and specific monitoring of environmental impacts like noise, dust, soil contamination, landscape structure, construction waste, flora and fauna, water pollution, air emissions and etc. conducted by Contractor's and Engineer's environmental management specialists.

60. The objects of monitoring, the sampling points, techniques, frequency of measurements and, targets, as well as entity responsible for monitoring, as indicated in SSEMP.

61. During the reporting period, the following monitoring activities have been carried out by CC and supervised by SC and MDF: Flora and Fauna, Noise, Water turbidity activities, Air quality.

- **Walkover Surveys were implemented on**: 11.07.2019; 07.08.2019; 09.09.2019; 08.10.2019, 08.11.2019 and on 08.12.2019 by Jimsher Mamuchadze for existing terrestrial fauna species and by Nino Memiadze for flora species. Results of measurements are presented in **Annex 4**. In the case of birds, there are no protected species recorded. No one from identified species are breeding and nesting near the project working areas. As for the Emerald and IBA sites, in that case this status is not oriented towards any of individual species and is rather more focused on the territory, which is important for the birds. Chorokhi delta site is protected under both statuses, however, the affected project area is only bordering on the location, which is significant for Chorokhi birds and it is not located within its bounds. Currently, no species have been seen breeding and nesting near the project working areas.
- **Environmental Manager of CC conducted Noise Measurements during** 5 days in order to identify and quantify noise level of workplace for community on: 08-12.07.2019; 12-16.08.2019; 02-06.09.2019; 07-11.10.2019; 11-15.11.2019; 09-13-12.2019. Results of measurements are presented in **Annex 1.** Based on the results of the tests conducted near the project sensitive receptors, monitoring noise levels are in norm of Resolution No 398 of the Government of Georgia, August 15, 2017, Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments" as well as IFC/WB limits.
- **Turbidity Measurements were conducted by Mamuka Shaorshadze on:** 09.07.2019; 12.08.2019; 02.09.2019; 07.10.2019; 12.11.2019 and on 09.12.2019; Results of measurements are presented under **Annex 3**; Based on the results of the tests conducted in this period are under the norm of national and international standards.
- **National Environmental Agency conducted Air Measurements on:** 19.06.2019; 25.07.2019; 26.08.2019; 22.09.2019; 27.10.2019 and on 16.12.2019. Results of measurements are presented in **Annex 2**. Results of Dust, Carbon Monoxide (CO), Nitrogen Dioxide (NO2) and Sulfur Dioxide (SO2) measurements are in norm (The Georgian decree of the Minister for Health, Labor and Social Affairs (297n of August 16, 2001) (as amended by the Order No 38/n of the same Ministry of 24.02.2003). Results of measurements are in norms of IFC/WB standards.

62. Calibration Certificate for noise measurement device (PCE-322A) was provided. Certificate for water turbidity measurement device was provided as well. Results of monitoring campaigns are provided under Attachments.
63. Monitoring tests conducted during the reporting period are in frame of the international and Georgian standards.

4.2 Trends

64. N/A

4.3 Summary of Monitoring Outcomes

65. No any recommendation for the additional monitoring.

4.4 Material Resources Utilization

4.4.1 Current Period

66. N/A

4.4.2 Cumulative Resource Utilization

67. N/A

4.5 Waste Management

68. Constructions works generate different type wastes starting from garbage, recycle waste, house hold waste and construction and demolition debris, including, small quantities of hazardous waste generated mainly from the vehicle maintenance activities (liquid fuels, lubricants, hydraulic oils, chemicals and etc.).
69. Waste Management Plan was approved by “Saunders Group” Ltd, MDF (Municipal Development Fund) and director of construction contractor “Struijk Group Georgia LLC”. There were installed three different waste bins in the temporary waste area. Proper signs are installed: Hazardous waste, General waste, paper waste, plastic waste, smoking area, temporary hazardous waste area, grievance box, do not burn, WC, keep area clean and etc. Temporary hazardous waste area has been arranged with two layers of Polyethylene. Area is fenced with metal fence and locked.
70. The Construction Company collects hazardous waste at the temporary storage sites and pass it to the licensed operator Sanitary LTD having environmental permit on operation of the hazardous wastes. The contract with “Sanitary” Ltd was signed on 07 April, 2017. Small amount of hazardous waste (liquid fuels, lubricants and contaminated rags).
71. Household waste - Contractor “Struijk Group Georgia” Ltd is conducting household waste segregation: Plastic, Paper and General Waste. On disposal of household waste, a letter was provided by Batumi Municipality on: 29 May, 2017. Based on letter two big waste bins

were provided by city municipality and once in a week, waste is taking out from the site by them to the municipal landfill.

72. Household waste as well as plastic and paper is collected in special waste bins and periodically disposed by Batumi Municipal Service on a contractual base. Hazardous waste area is well established with concrete ground, roofing, fencing and drainage system. Hazardous waste such as contaminated soil, solvents, and materials used in oil spill clean-ups and etc. is collected in closed drams and passed to a licensed operator company "Sanitari" Ltd., which has the permit on operation of the hazardous waste.

There were three type of the hazardous waste accumulated during the last period of the project activates: Used oil, oiled clothes and filters and oil contaminated crushed rocks/gravel. The weight of hazardous materials taken from sites after weighting up are:

1. Used oil – 280 Kg;
2. Oiled clothes and filters – 264 Kg;
3. Oil contaminated crushed rocks/gravel – 540 Kg.

73. Monitoring of waste management issues is being carried out by contractor environmental specialist and by supervising environmental specialist. Construction waste is 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. The waste is being removed from construction site by authorized personal only in accordance of safety regulations. As soon as the construction works are over, construction waste as well as all types of waste accumulated at the camp site will be removed. Concrete debris and all kind of construction waste generated during demolition works near the site camp and step by step will be taken to the licensed landfill located near city Batumi. After the demolition works, cleaning the site from the mud and landscaping the area will be carried out. (Please see attachment 9 for the photo materials).

4.5.2 Current Period

74. Table 5 below provides breakdown of waste streams during current reporting period. This information should include

Table 5: Breakdown of waste streams during current reporting period

Type of waste	Source of waste	Quantity of waste generated/ Ton	Hazard/non Hazardous	Temporary storage	Final disposal
Demolished concrete from former boulevard	Concrete debris generated during demolition works; excessive concrete from the construction	≈900 Ton	Non--hazardous	Near construction area	Collected by "Struijk group Georgia" LLC for final disposal permitted area (Batumi municipal construction waste landfill)
General solid waste (domestic waste, including food waste)	Construction base and camps, worker's welfare and sanitation facilities	≈1.1 Ton	Non-hazardous	Segregated and stored in an approved waste accumulation area on site	Collected by "Struijk group Georgia" LLC and handed over to competent organizations for final disposal (municipality landfill) - waste skips will be provided on the site and Batumi cleaning service will clean periodically.

Plastics	Construction base and camps, worker's welfare and sanitation facilities	≈0.2 Ton	Non-hazardous	Segregated and stored in an approved waste accumulation area on site	Collected by "Struijk group Georgia" LLC and handed over to municipality cleaning service. Disposal (municipality household landfill)
Paper and cardboard	Construction base and camps, worker's welfare and sanitation facilities	≈0.1 Ton	Non-hazardous	Segregated and stored in an approved waste accumulation area on site	Collected by "Struijk group Georgia" LLC and handed over to Batumi municipality cleaning service. Disposal (municipality household landfill)
Oils and lubricants, oil contaminated cleaning cloths	Generated during machinery and equipment maintenance and repair	• Used oil – 280 Kg; • Oiled clothes and filters – 264 Kg; • Oil contaminated crushed rocks/gravel – 540 Kg.	Hazardous	Collected in drums, labeled and sealed; stored in locked and secure area on site, specially designated for hazardous materials / waste temporary accumulation	Recovery and re-use options to be fully explored depending on site and amount; collected by "Struijk group Georgia" LLC and handed over to special certified company "Sanitary" ltd.

4.5.3 Cumulative Waste Generation

75. N/A.

4.6 Health and Safety

4.6.1 Community Health and Safety

76. There were no incidents occurred during the reporting period.

Name/Surname	Position	Phone	E-Mail	Working period
Mamuka Shaorshadze	QHSE Manager	595116071	m.shaorshadze@gmail.com	13.02.2017 - Present

77. QHSE Manager (Mamuka Shaorshadze) registers all project near misses and keeps them in log book in the site office.

4.6.2 Worker Safety and Health

78. Detailed statistics on accident rates, including Lost Time Incidents, Accidents and near misses is provided under the Table 6 below:

Table 6: Near Misses during reporting period

Date of Occurrence	Employee involved	Description of Near Miss	Area	Corrective action required
08.08.2019	Sub-contractor ECC Ltd.	It was discovered that cut pieces of reinforcement bars were scattered on the access where the transport moving. The trucks are using this road to take some materials through the site. It was a possibility to blow the tire crossing this area and damage properties or workforce.	Construction site	To collect the cut pieces of reinforcement bars on the proper place near the container and put them in the iron barrel. Regular housekeeping this area and handover to scrap periodically

79. ADB mission requested CC in coordination with PIU/MDF to develop a method statement and community health and safety plan to deal with construction works during the summer months. The purpose of this plan is to provide the information and method by which community and tourist's health and safety will be ensured, during an open beach section in summer.
80. Community Health and Safety Plan was prepared by the CC. It provides information regarding the existing risks and measures which should be taken to deal with those risks and take all the necessary precautions to provide a safe opened section.

4.7 Trainings

81. On 8th of July, 2019 HSES training has been conducted for the new workers which will be working to installation of the boulevard pavement; the new workers will be working under the company "ECC" Ltd. The new workers well understood of the project requirements and HSES rules and their responsibilities. Has been signed the special site induction paper and list of participation.
82. On 8th of July, 2019 HSES training have been conducted for the new workers which will be working with angle grinder to make smooth the crown wall of the project area; the new workers will be working under the company "Alpana" Ltd. The new workers well understood of the project requirements and HSES rules and their responsibilities. Has been signed the special site induction paper and list of participation.
83. On 6th of August, 2019 HSES training have been conducted for the new workers which will be working with hammer drill to done repairing works of the crown wall and rebar works to make new boulevard; the new workers will be working under the sub-contractor company "Alpana" Ltd. The new workers well understood of the project requirements and HSES rules and their responsibilities. Has been signed the special site induction paper and list of participation.

84. On 15th of August, 2019 HSES training has been conducted for the new workers, which will be installing the curbs along of the boulevard, during the project activities; the workers will be working under the sub-contractor company “ZUGO” Ltd. The new workers well understood of the project requirements and HSES rules and their responsibilities. Has been signed the special site induction paper and list of participation.
85. On 24nd of September, 2019 HSES training have been conducted for the new worker, which will be working to installing the curbs, the boulevard, the pumping the pebbles from north to South side on the sea side and etc. He well understood of the project requirements and HSES rules and his responsibility. Has been signed the special site induction paper and list of participation.
86. On 1st of October, 2019 HSES training have been conducted for the new flagmen. New flagmen will be responsible all project activities (installing the curbs, the boulevard, the pumping the pebbles from north to South side on the sea side and etc.). He fully understands of project requirements and HSES rules and his responsibility. Has been signed the special site induction paper and list of participation.
87. On 15th of October, 2019 HSES training have been conducted for the operators of the Bouldozers, JCB, High-up, Loader, and Excavator and for the new flagman, during the working of the pipe installation for the dredging process in the boulevard (North to South). New personnel (operators and flagman) will be responsible all project activities (safe driving, correct and safely moving on the old boulevard, safely installing the pipes, working in the safe environment, and project HSES responsibilities and requirements). They fully understand of project requirements and HSES rules and their responsibilities. Have been signed the special site induction paper and list of participation.
88. On 5th of November, 2019 HSES training has been conducted for the operators of the bulldozer and master of the crown wall which is doing the surface works of the wall. They fully understand of project requirements and HSES rules and their responsibilities. Have been signed the special site induction paper and list of participation.

5 FUNCTIONING OF THE SEMP

5.1 SEMP Review

85. Construction Contractor “Struijk”, as it was mentioned above, implements environmental monitoring of construction activities in accordance to SSEMP. Based on the EMP/SSEMP requirements, monitoring measures of project includes construction site supervision, verification of permits, monitoring of compliance of the contractors’ performance and specific monitoring of environmental impacts like noise, dust, soil contamination, landscape structure, construction waste, flora and fauna, water pollution, air emissions and etc.
86. Contractor has the ability to fully implement the requirements set out under the SSEMP. Monitoring of SSEMP implementation is conducted by Contractor’s and Engineer’s environmental management specialists. The Construction Contractor’s Environmental Manager Mamuka Shaorshadze is conducting weekly site inspections using check-lists based on SEMP.
87. Acting SSEMP is effective as along with project design change MDF ensured to update it as well and mitigation measures set out under the document are appropriate and working as intended. No other alternative better mitigation measures need to be set out, as existing ones are quite effective and comprehensive.

6 GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good Practice

88. As Good Practice for the project can be considered elaboration of Location Specific Community Health and Safety plan for the opened beach under the project during the summer season, which was developed by CC in accordance to ADB's Environmental Specialist – Duncan Lang's request.
89. The purpose of this plan is to provide the information and method by which community and tourists health and safety will be ensured, during an open beach section in summer; Also, plan provides information regarding the existing risks and measures which should be taken to deal with those risks and take all the necessary precautions to provide a safe opened section.

6.2 Opportunities for Improvement

90. N/A

7 SUMMARY AND RECOMMENDATIONS

7.1 Summary

91. Effective implementation of Environmental Safeguards can be summarized in following aspects:

- IEE was updated along with project design change;
- Construction works were suspended during design change process;
- SSEMP was updated prior to construction works have been started;
- Special management plan for Community Health and Safety was elaborated for opened project area during the summer season.

7.2 Recommendations

Demolishing activities of the camp site is partially implemented and metal and construction waste left at the camp site will be removed during Q1 2020 and will be reflected in final EMR. During the next reporting period (Jan-Jun 2020) environmental specialist of Supervision Consultant will conduct Post-Construction Environmental Audit, fill up the checklist and prepare Post-construction environmental audit report which will be enclosed as an Annex to the Final EMR to be prepared in July 2020 (reflecting Jan-Jun 2020 reporting period).

8 ANNEXES

8.1 Annex 1 - Noise Measurements (July - December, 2019)

8.1.1 July

Report on: Noise Measurement

Monitoring Test

Period of Inspection: 20190708 - 20190712	**Project: Coastal Protection Batumi**	**Locations :**	**1. School-lyceum "Taoba"** **2. Shota Rustaveli University** **3. The Magnolia Hotel**

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted noise measurements in order to identify and quantify noise level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - noise Levels; the samples have been taken at three location (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), three times a day (morning, afternoon and evening) during five days, during 23 to 46 seconds for each taken sample.

Device Name: **Sound Level Meter PCE-322A**

Noise Standards: Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments"

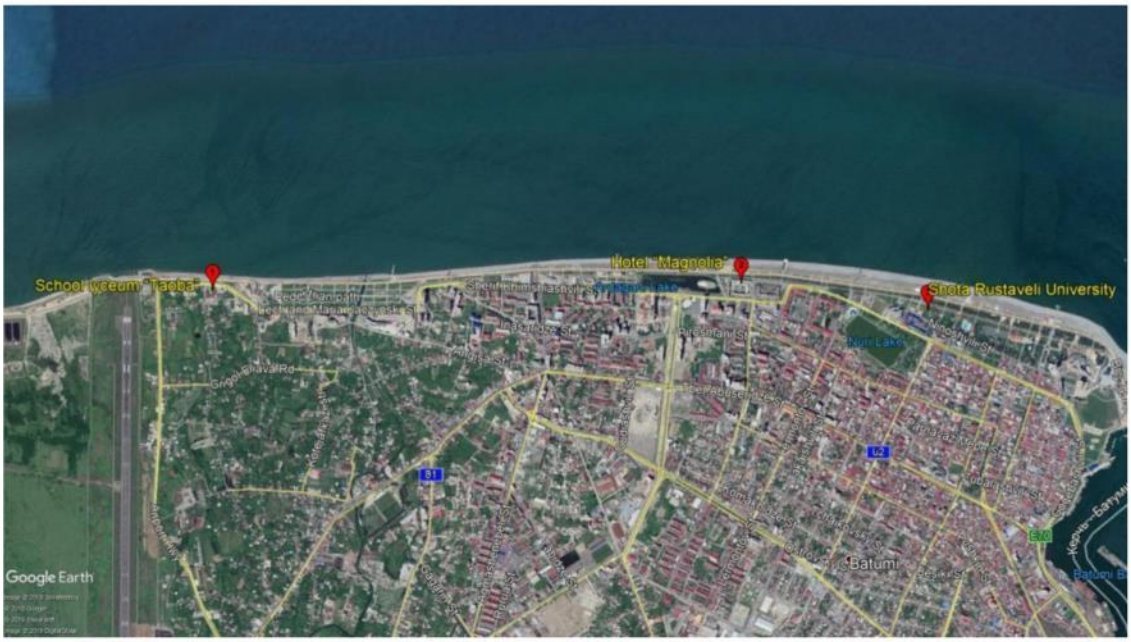
Permissible norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments

N	The applied functions of the spaces and areas	Admissible norms		
		L day (DBA)		
		Day	Evening	L night (DBA)
1	Studying establishments and reading rooms	35	35	35
2	The treatment cabinets of the medical establishments	40	40	40
3	Residential and sleeping areas	35	30	30
4	The treatment and rehabilitation rooms of the inpatient medical establishments	35	30	30
5	The rooms of the hotel/guest houses/motels	40	35	35
6	Trading halls and guest rooms	55	55	55
7	Restaurants, bars, cafes	50	50	50
8	Spectator/listeners' hall	30	30	30
9	Sport halls and pools	55	55	55
10	Small offices (≤100 m^3), working premises and premises	40	40	40

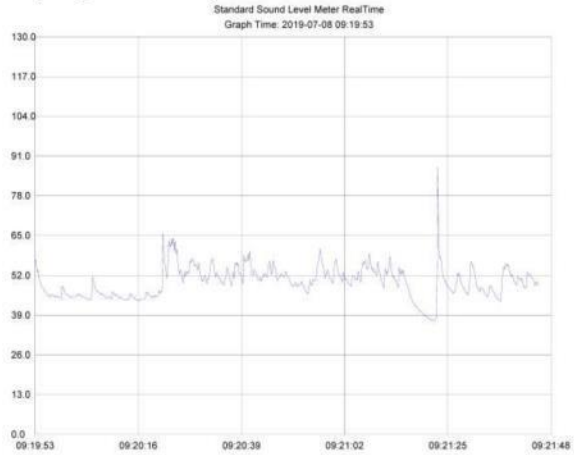
	without office technique			
11	Large offices (≥100 m³), working premises and premised with office technique	45	45	45
12	Conversation premises	35	35	35
13	Territories, distanced from the low multistoried residential houses (number of the floors >6), medical establishments, children and social service objects	50	45	40
14	Territories, distanced from the multistoried residential houses (number of the floors >6), cultural, educational, administrative and scientific establishments	55	50	45
15	Territories, distanced from the hotels, trading, service, sport and social organizations	60	55	50

Note: The threshold #13 and highlighted in the table (yellow) is thresholds, which are considered.

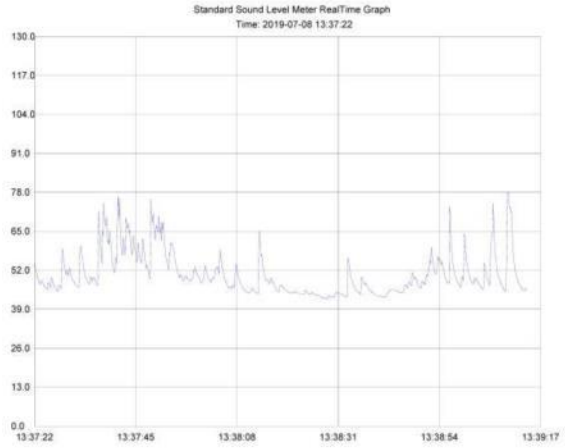
Map with samples points:



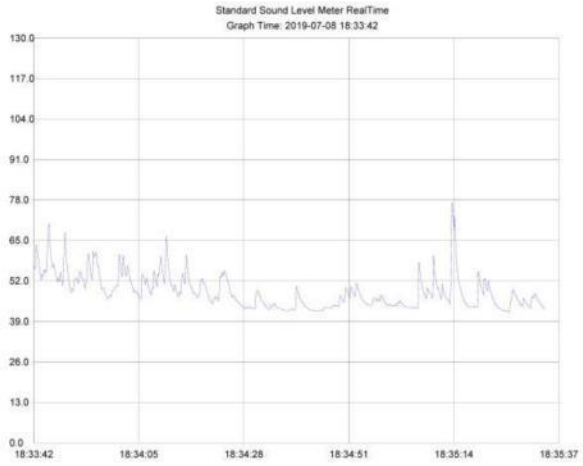
Test results for School-lyceum "Taoba":
Day 1 (08.07.2019):



Start Time: 08-07-2019,09:19:53
Maxnum: 87.40 08-07-2019,09:21:22
Minnum: 37.10 08-07-2019,09:21:21
Sample Rate: 0.10
Average: 49.80

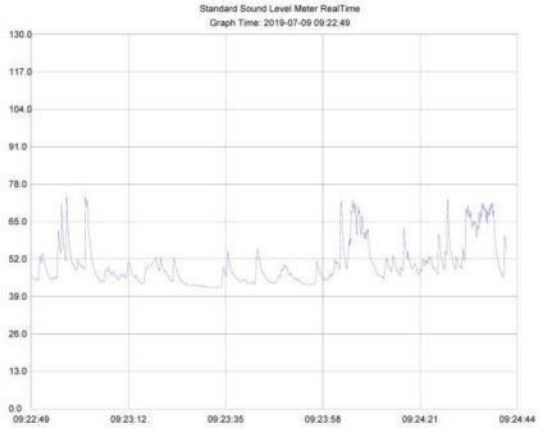


Start Time: 08-07-2019,13:37:22
Maxnum: 78.00 08-07-2019,13:38:28
Minnum: 42.50 08-07-2019,13:37:22
Sample Rate: 0.10
Average: 50.65

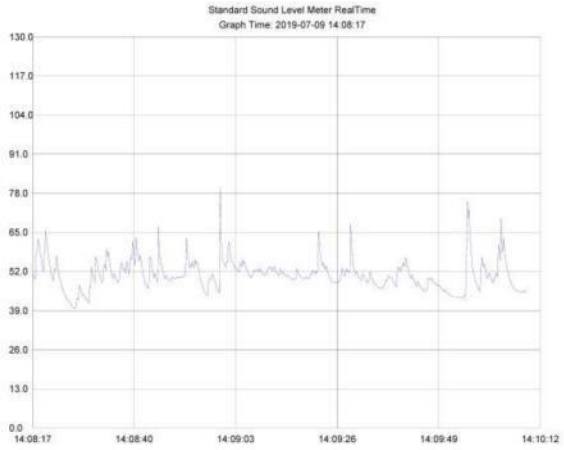


Start Time: 08-07-2019,18:33:42
Maxnum: 77.00 08-07-2019,18:35:13
Minnum: 42.10 08-07-2019,18:35:25
Sample Rate: 0.10
Average: 48.57

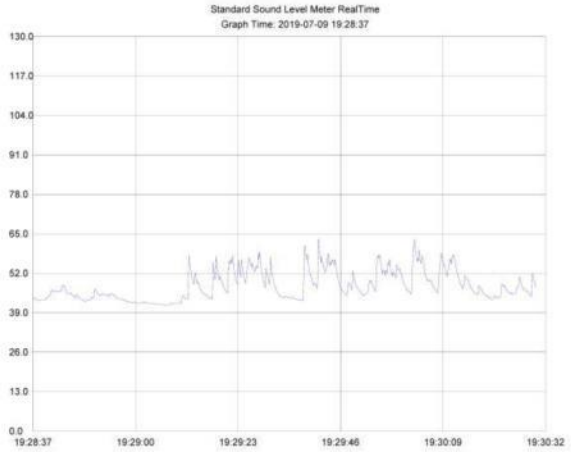
Day 2 (09.07.2019):



Start Time: 09-07-2019,09:22:49
Maxnum: 73.60 09-07-2019,09:22:59
Minnum: 42.10 09-07-2019,09:23:31
Sample Rate: 0.10
Average: 50.14

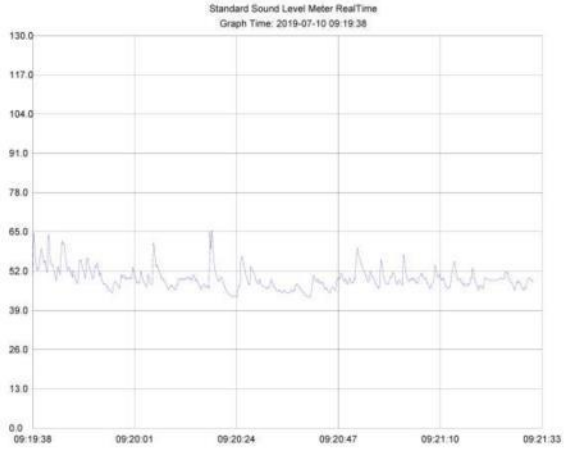


Start Time: 09-07-2019,14:08:17
Maxnum: 80.00 09-07-2019,14:08:26
Minnum: 39.80 09-07-2019,14:08:17
Sample Rate: 0.10
Average: 50.90

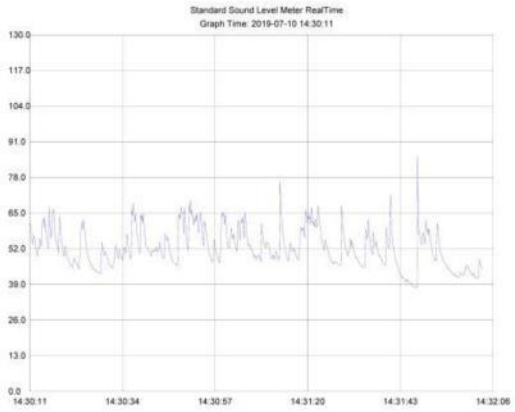


Start Time: 09-07-2019,19:28:37
Maxnum: 63.50 09-07-2019,19:29:41
Minnum: 41.50 09-07-2019,19:29:06
Sample Rate: 0.10
Average: 47.88

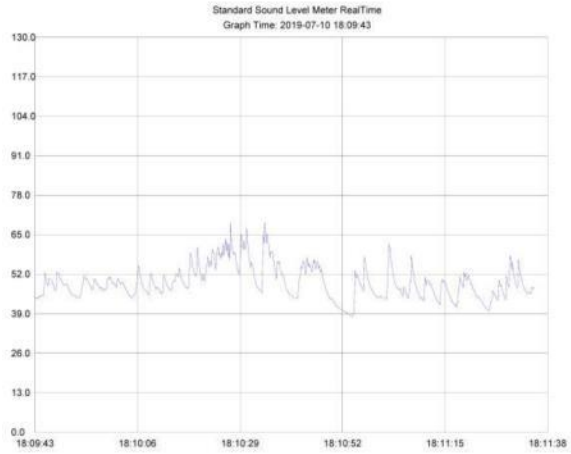
Day 3 (10.07.2019):



Start Time: 10-07-2019,09:19:38
Maxnum: 65.50 10-07-2019,09:20:19
Minnum: 43.40 10-07-2019,09:20:24
Sample Rate: 0.10
Average: 49.52

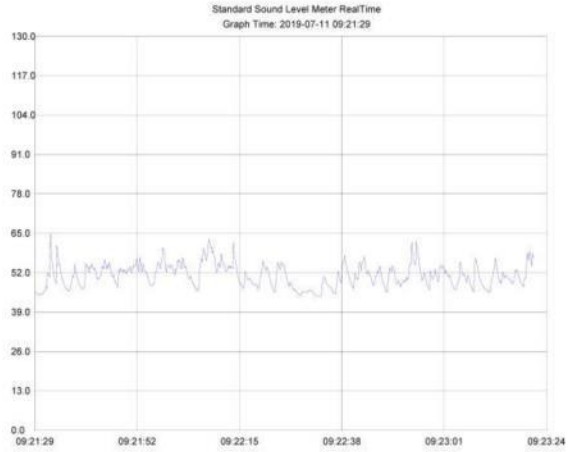


Start Time: 10-07-2019,14:30:11
Maxnum: 85.70 10-07-2019,14:31:47
Minnum: 37.80 10-07-2019,14:31:46
Sample Rate: 0.10
Average: 52.40

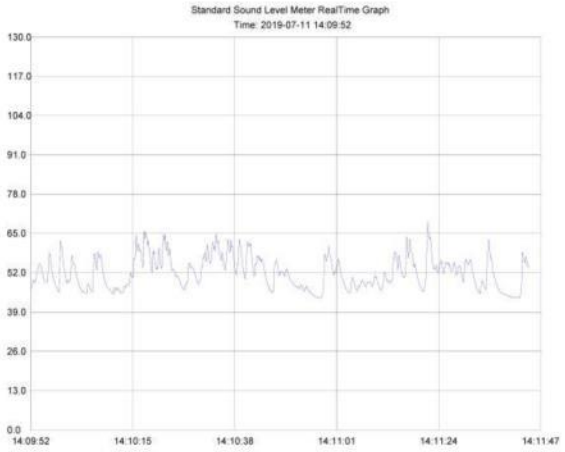


Start Time: 10-07-2019,18:09:43
Maxnum: 69.00 10-07-2019,18:10:34
Minnum: 38.30 10-07-2019,18:10:54
Sample Rate: 0.10
Average: 49.30

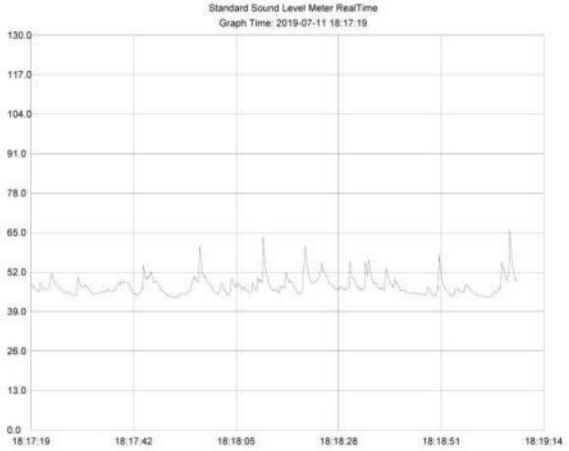
Day 4 (11.07.2019):



Start Time: 11-07-2019,09:21:29
Maxnum: 65.00 11-07-2019,09:21:33
Minnum: 44.00 11-07-2019,09:22:33
Sample Rate: 0.10
Average: 51.17

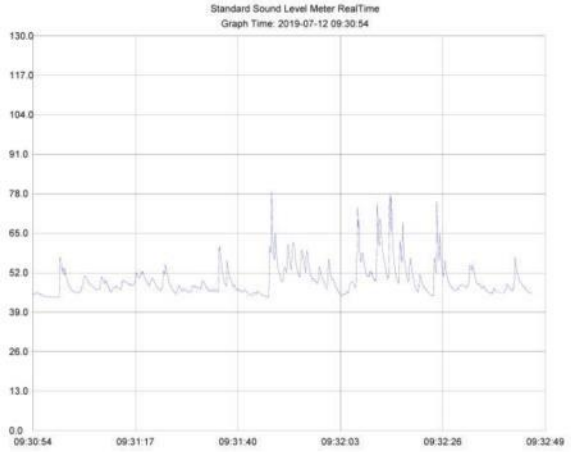


Start Time: 11-07-2019,14:09:52
Maxnum: 68.90 11-07-2019,14:11:21
Minnum: 43.60 11-07-2019,14:11:42
Sample Rate: 0.10
Average: 52.03

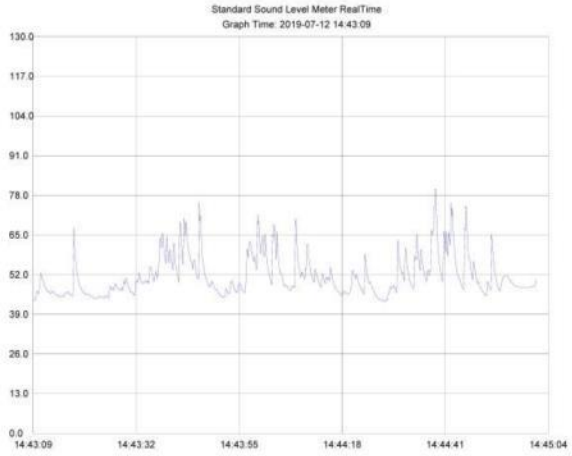


Start Time: 11-07-2019,18:17:19
Maxnum: 65.80 11-07-2019,18:19:07
Minnum: 43.70 11-07-2019,18:17:50
Sample Rate: 0.10
Average: 47.45

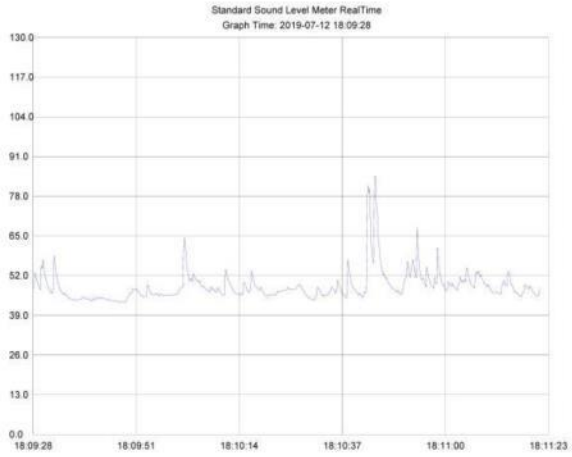
Day 5 (12.07.2019):



Start Time: 12-07-2019,09:30:54
Maxnum: 78.80 12-07-2019,09:31:46
Minnum: 43.90 12-07-2019,09:30:58
Sample Rate: 0.10
Average: 49.62



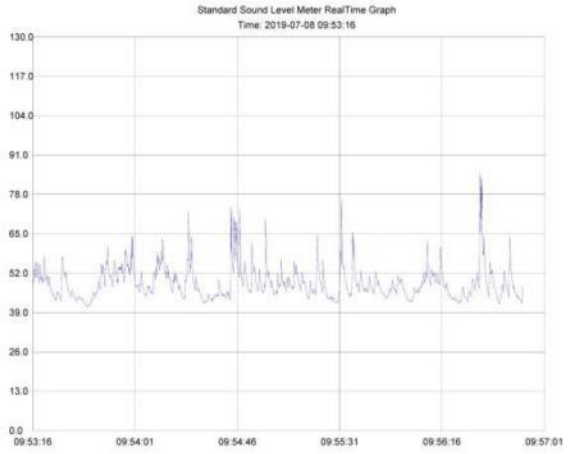
Start Time: 12-07-2019,14:43:09
Maxnum: 80.10 12-07-2019,14:44:38
Minnum: 43.20 12-07-2019,14:44:26
Sample Rate: 0.10
Average: 51.61



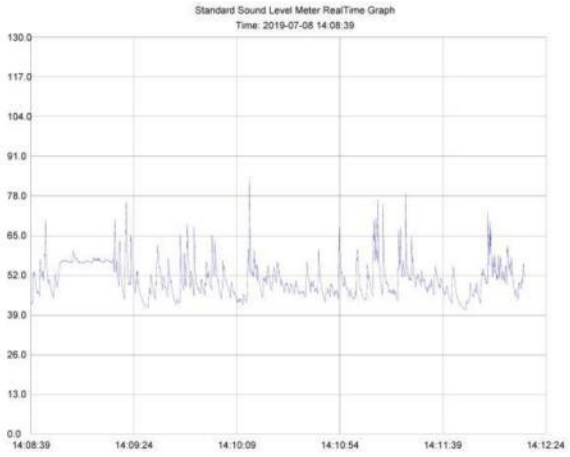
Start Time: 12-07-2019,18:09:28
Maxnum: 84.80 12-07-2019,18:10:44
Minnum: 43.30 12-07-2019,18:09:48
Sample Rate: 0.10
Average: 48.47

Test results for Shota Rustaveli University:

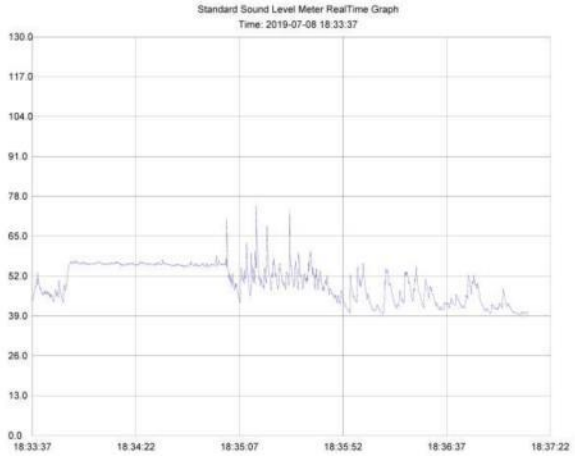
Day 1 (08.07.2019):



Start Time: 08-07-2019,09:53:16
Maxnum: 85.10 08-07-2019,09:56:34
Minnum: 41.20 08-07-2019,09:56:41
Sample Rate: 0.10
Average: 48.79

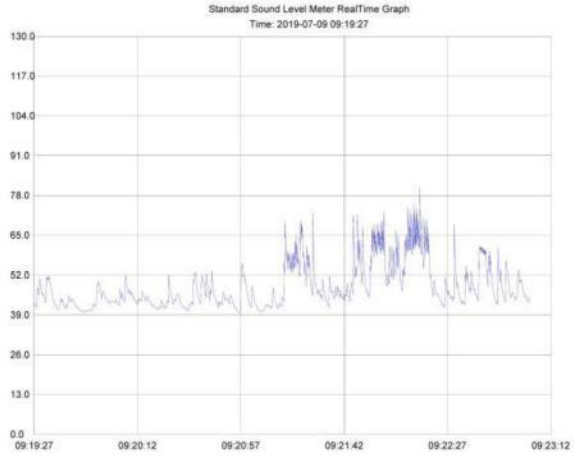


Start Time: 08-07-2019,14:08:39
Maxnum: 83.80 08-07-2019,14:10:15
Minnum: 40.60 08-07-2019,14:11:54
Sample Rate: 0.10
Average: 50.67

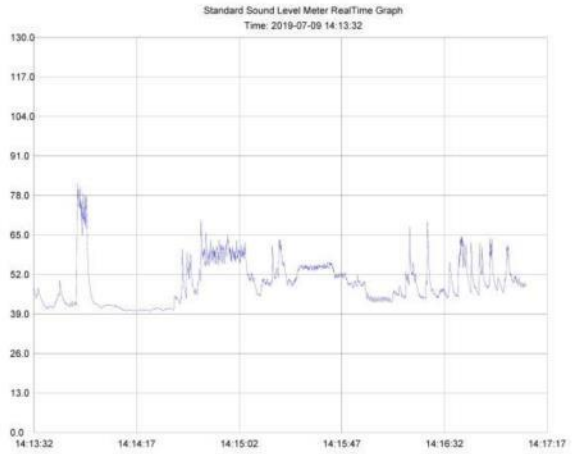


Start Time: 06-05-2019,18:33:37
Maxnum: 74.90 06-05-2019,18:35:16
Minnum: 39.30 06-05-2019,18:37:13
Sample Rate: 0.10
Average: 49.90

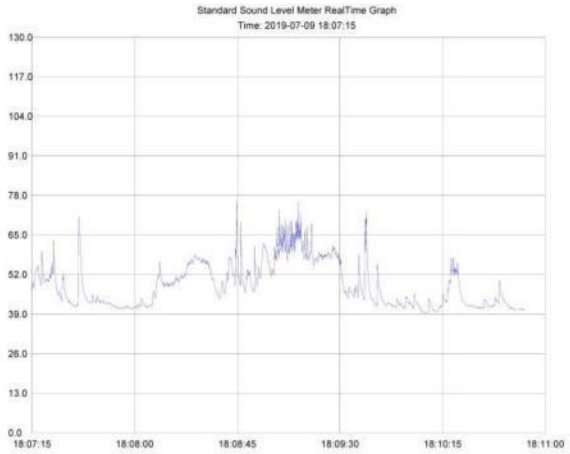
Day 2 (09.07.2019)



Start Time: 09-07-2019,09:19:27
Maxnum: 80.40 07-05-2019,09:22:16
Minnum: 39.70 07-05-2019,09:20:56
Sample Rate: 0.10
Average: 48.18

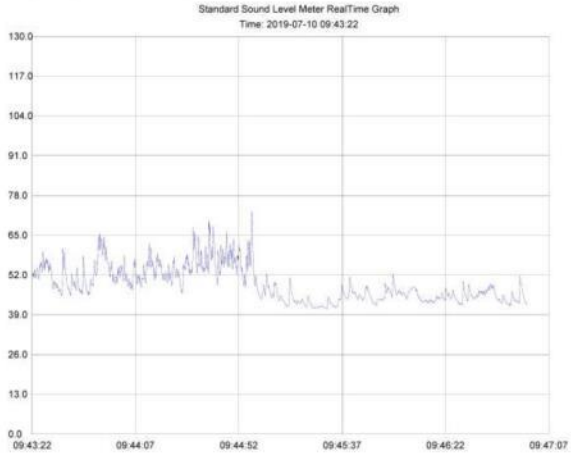


Start Time: 09-07-2019,14:13:32
Maxnum: 82.00 09-07-2019,14:13:42
Minnum: 39.90 09-07-2019,14:14:25
Sample Rate: 0.10
Average: 49.23

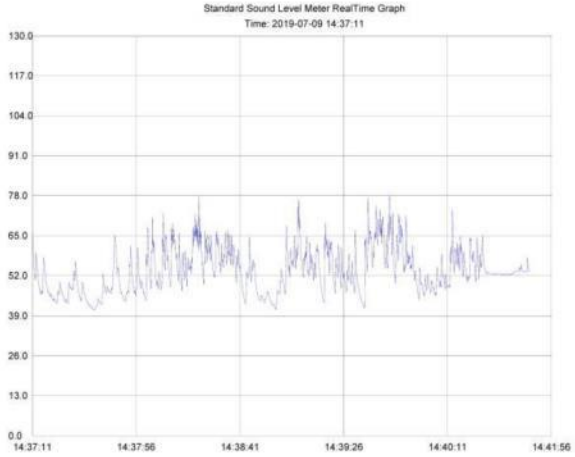


Start Time: 09-07-2019,18:07:15
Maxnum: 76.70 09-07-2019,18:08:45
Minnum: 39.20 09-07-2019,18:10:07
Sample Rate: 0.10
Average: 48.57

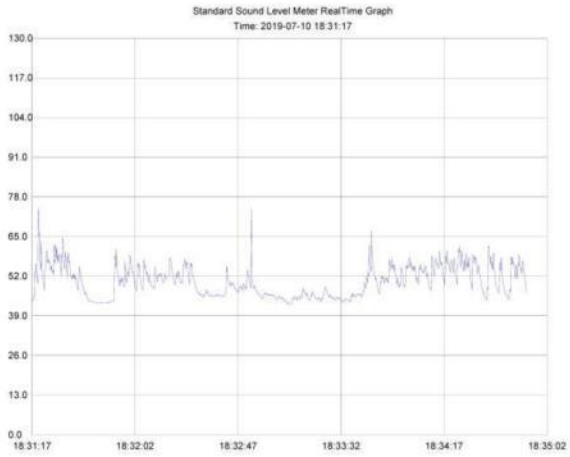
Day 3 (10.07.2019):



Start Time: 10-07-2019,09:43:22
Maxnum: 72.80 10-07-2019,09:44:59
Minnum: 40.90 10-07-2019,09:45:30
Sample Rate: 0.10
Average: 48.97

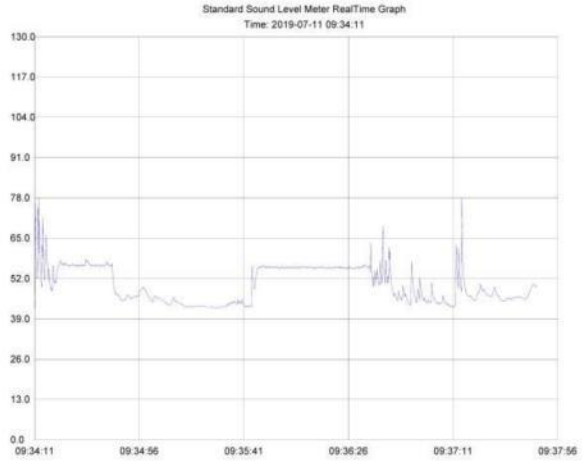


Start Time: 08-05-2019,14:37:11
Maxnum: 77.70 08-05-2019,14:37:36
Minnum: 40.90 08-05-2019,14:37:11
Sample Rate: 0.10
Average: 53.51

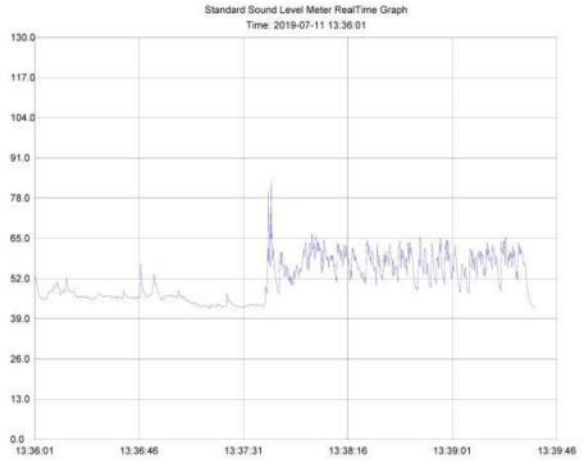


Start Time: 10-07-2019,18:31:17
Maxnum: 74.30 10-07-2019,18:31:20
Minnum: 42.70 10-07-2019,18:33:09
Sample Rate: 0.10
Average: 50.17

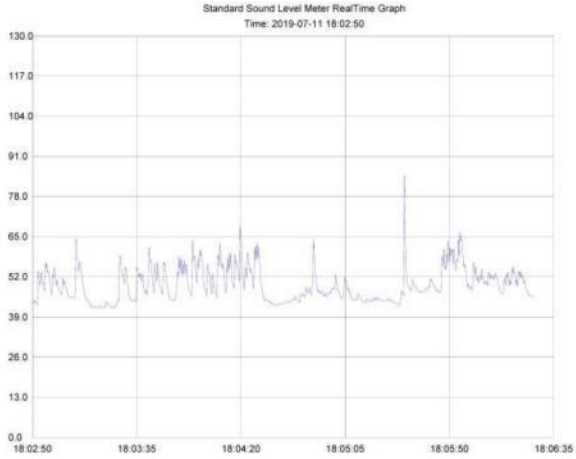
Day 4 (11.07.2019):



Start Time: 09-05-2019,09:34:11
Maxnum: 78.00 09-05-2019,09:34:14
Minnum: 42.30 09-05-2019,09:35:32
Sample Rate: 0.10
Average: 49.95

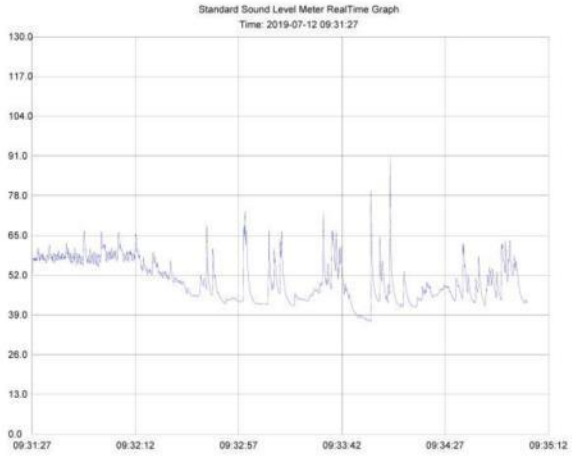


Start Time: 11-07-2019,13:36:01
Maxnum: 84.10 11-07-2019,13:37:53
Minnum: 42.60 11-07-2019,13:37:31
Sample Rate: 0.10
Average: 51.71

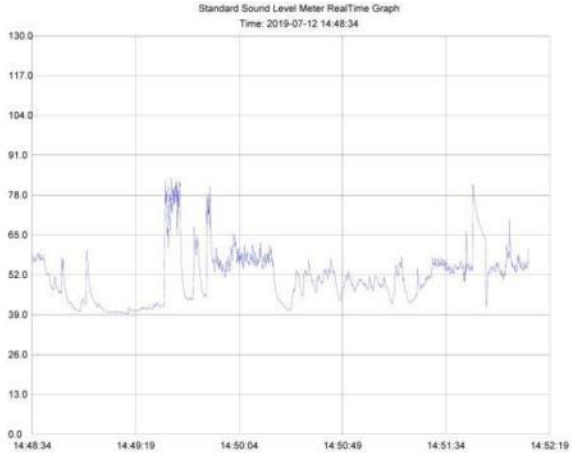


Start Time: 11-07-2019,18:02:50
Maxnum: 84.90 11-07-2019,18:05:31
Minnum: 41.90 11-07-2019,18:03:19
Sample Rate: 0.10
Average: 49.41

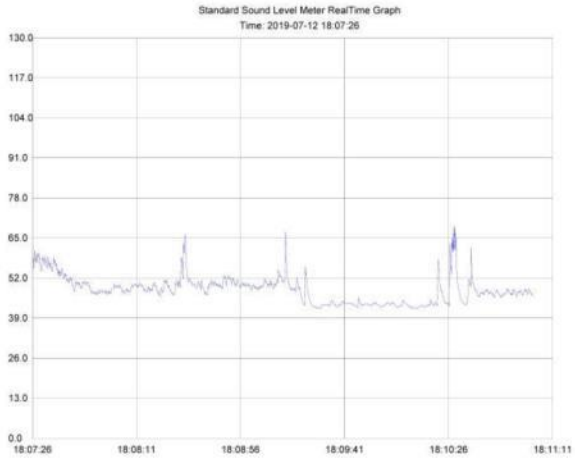
Day 5 (12.07.2019):



Start Time: 12-07-2019,09:31:27
Maxnum: 90.70 12-07-2019,09:34:02
Minnum: 36.80 12-07-2019,09:33:54
Sample Rate: 0.10
Average: 50.37



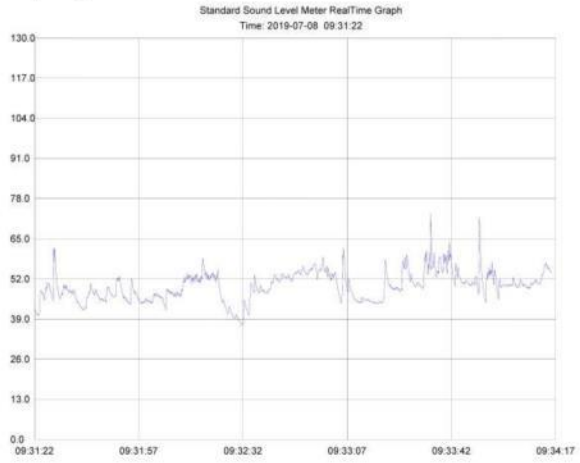
Start Time: 12-07-2019,14:48:34
Maxnum: 83.70 12-07-2019,14:49:33
Minnum: 39.40 12-07-2019,14:49:12
Sample Rate: 0.10
Average: 51.33



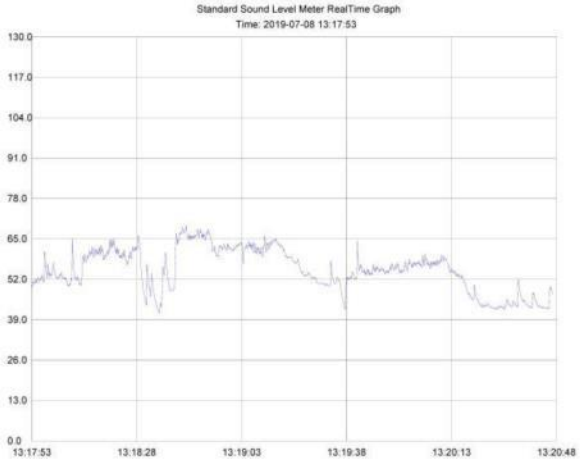
Start Time: 12-07-2019,18:07:26
Maxnum: 69.20 12-07-2019,18:10:30
Minnum: 42.10 12-07-2019,18:09:29
Sample Rate: 0.10
Average: 48.20

Test results for The Magnolia Hotel:

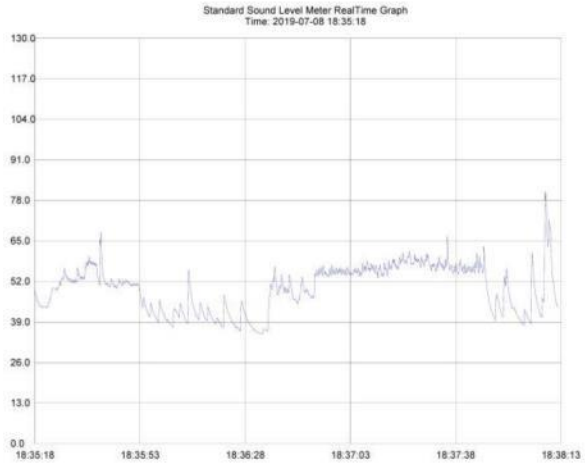
Day 1 (08.07.2019):



Start Time: 08-07-2019,09:31:22
Maxnum: 73.40 08-07-2019,09:33:35
Minnum: 37.10 08-07-2019,09:32:32
Sample Rate: 0.10
Average: 49.70



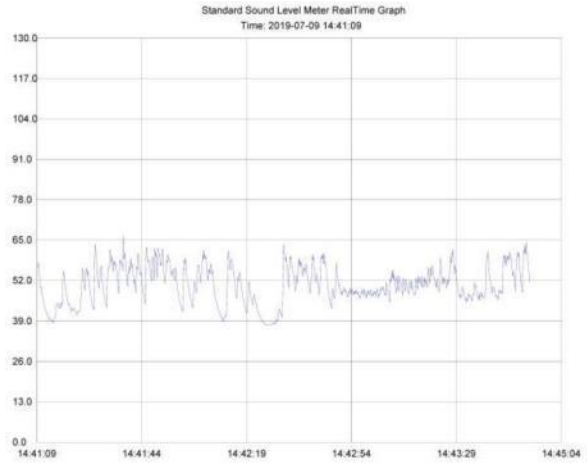
Start Time: 08-07-2019,13:17:53
Maxnum: 69.30 08-07-2019,13:18:44
Minnum: 41.10 08-07-2019,13:18:35
Sample Rate: 0.10
Average: 54.98



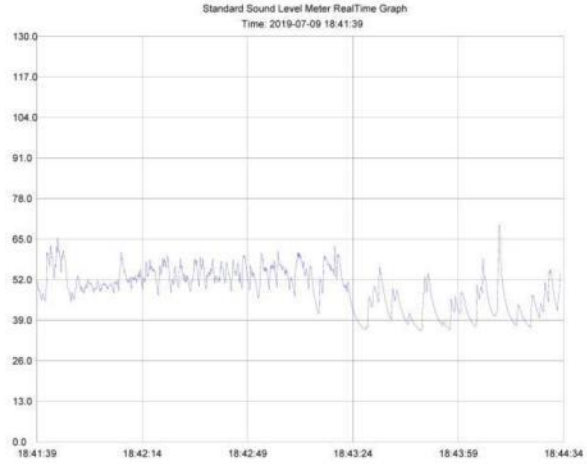
Start Time: 08-07-2019,18:35:18
Maxnum: 80.80 08-07-2019,18:38:07
Minnum: 35.10 08-07-2019,18:36:34
Sample Rate: 0.10
Average: 49.77

Day 2 (09.07.2019):

Start Time: 09-07-2019,09:22:07
Maxnum: 62.30 09-07-2019,09:24:58
Minnum: 38.10 09-07-2019,09:23:16
Sample Rate: 0.10
Average: 49.78

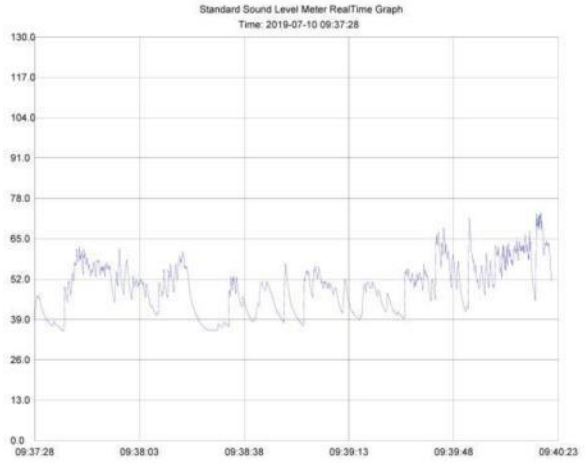


Start Time: 09-07-2019,14:41:09
Maxnum: 66.50 09-07-2019,14:41:36
Minnum: 37.60 09-07-2019,14:42:26
Sample Rate: 0.10
Average: 50.56

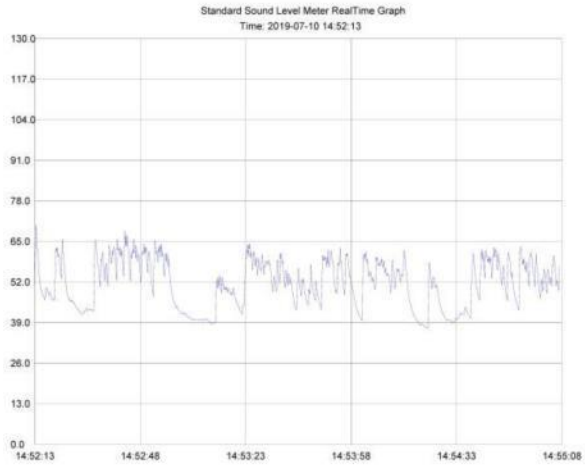


Start Time: 09-07-2019,18:41:39
Maxnum: 69.70 09-07-2019,18:44:14
Minnum: 35.60 09-07-2019,18:43:46
Sample Rate: 0.10
Average: 49.32

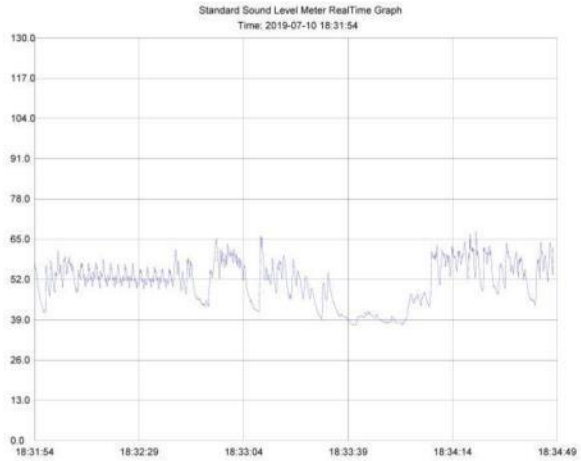
Day 3 (10.07.2019):



Start Time: 10-07-2019,09:37:28
Maxnum: 73.40 10-07-2019,09:40:13
Minnum: 35.30 10-07-2019,09:37:39
Sample Rate: 0.10
Average: 49.49

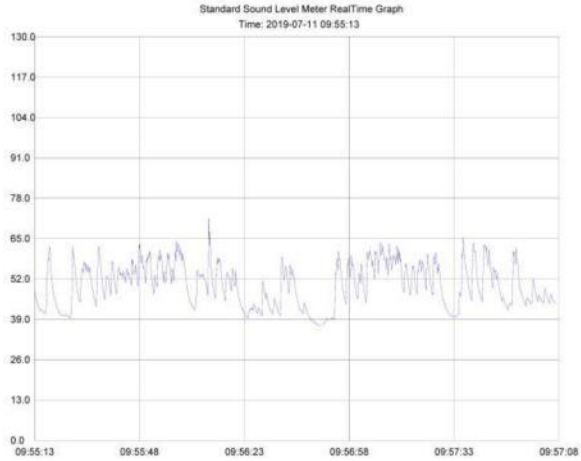


Start Time: 10-07-2019,14:52:13
Maxnum: 70.20 10-07-2019,14:52:13
Minnum: 37.40 10-07-2019,14:54:23
Sample Rate: 0.10
Average: 51.68

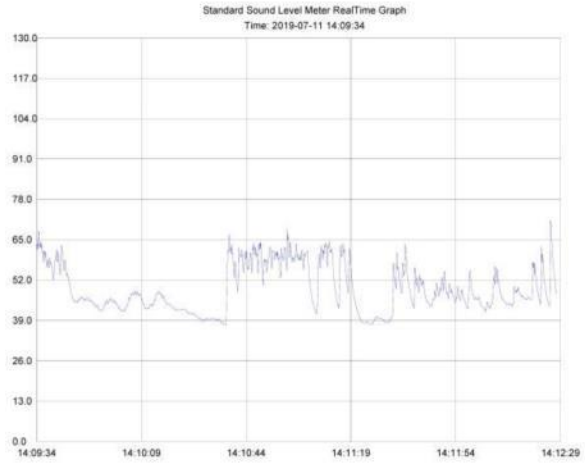


Start Time: 12-06-2019,18:31:54
Maxnum: 67.50 12-06-2019,18:34:24
Minnum: 37.30 12-06-2019,18:33:41
Sample Rate: 0.10
Average: 50.99

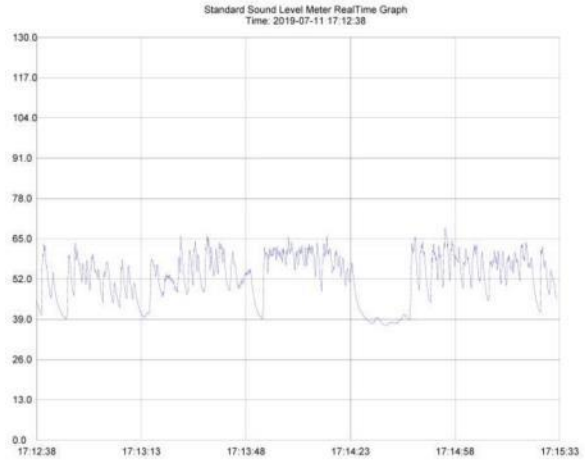
Day 4 (11.07.2019):



Start Time: 11-07-2019,09:55:13
Maxnum: 71.60 11-07-2019,09:56:11
Minnum: 37.00 11-07-2019,09:56:48
Sample Rate: 0.10
Average: 50.06

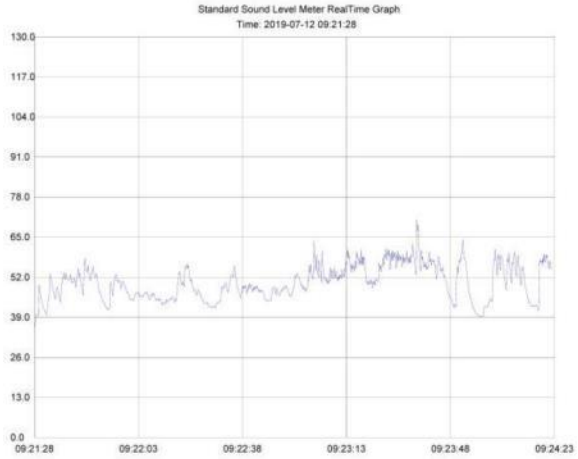


Start Time: 11-07-2019,14:09:34
Maxnum: 71.10 11-07-2019,14:12:25
Minnum: 37.60 11-07-2019,14:10:38
Sample Rate: 0.10
Average: 49.19

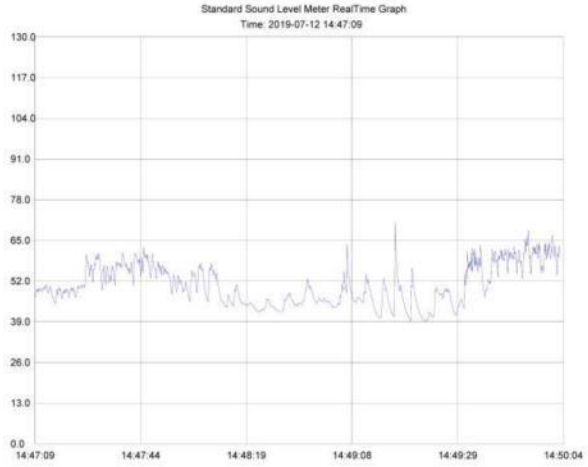


Start Time: 11-07-2019,17:12:38
Maxnum: 68.70 11-07-2019,17:14:55
Minnum: 37.00 11-07-2019,17:14:36
Sample Rate: 0.10
Average: 52.59

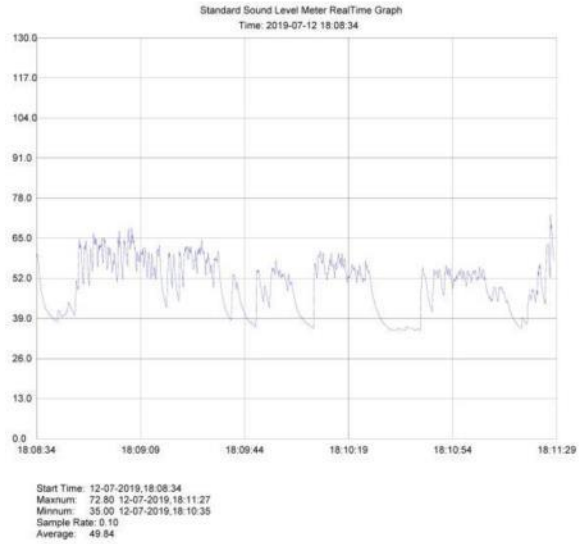
Day 5 (12.07.2019):



Start Time: 12-07-2019,09:21:28
Maxnum: 70.60 12-07-2019,09:23:34
Minnum: 35.80 12-07-2019,09:23:59
Sample Rate: 0.10
Average: 50.29



Start Time: 12-07-2019,14:47:09
Maxnum: 70.60 12-07-2019,14:48:54
Minnum: 39.20 12-07-2019,14:49:18
Sample Rate: 0.10
Average: 50.73



Meteorological Data (08.07.2019 - 12.08.2019) Batumi, Georgia

Weather History & Observations

2019	Temp. (°F)			Dew Point (°F)			Humidity (%)			Pressure (hPa)		Wind (km/h)			Precip. (mm)	Events
July	high	avg	low	high	avg	low	high	avg	low	high	low	high	avg	low	sum	
08	27	25	21	21	20	18	94	76	59	1012	1008	18	5	0.0	0.00	Partly sunny
09	28	25	20	22	21	19	96	76	63	1015	1011	25	7	0.0	25.65	Scattered clouds
10	28	25	20	22	20	17	92	73	59	1013	1007	43	11	0.0	0.00	Sunny
11	28	25	20	23	20	17	94	76	63	1008	1003	21	6	0.0	0.51	Scattered clouds
12	24	22	20	21	20	18	97	85	70	1012	1003	30	5	0.0	54.86	A t-storm around in the a.m.

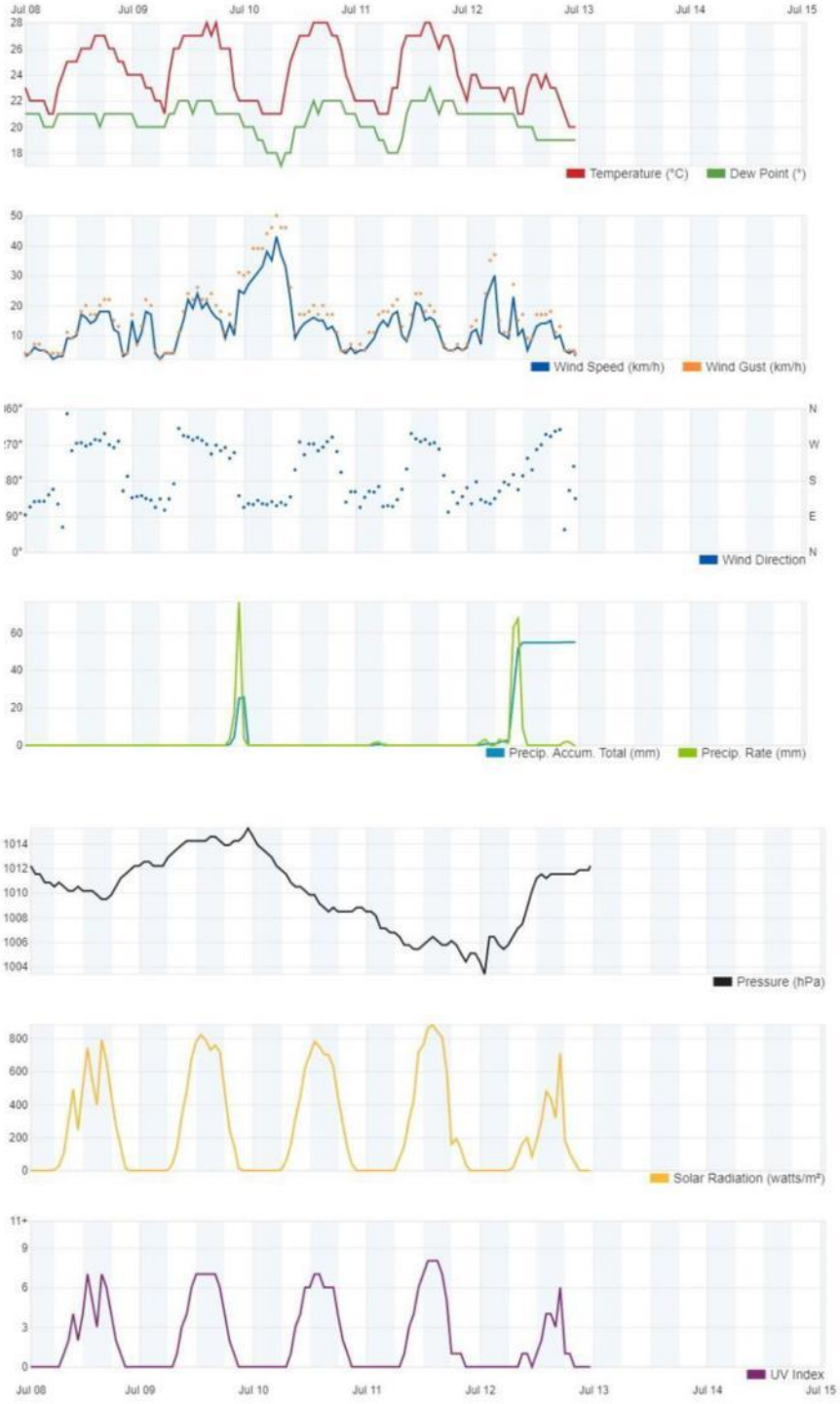

Jul 08
Jul 09
Jul 10
Jul 11
Jul 12
Jul 13
Jul 14
Jul 15
Temperature (°C)
Dew Point (°)
Wind Speed (km/h)
Wind Gust (km/h)
Wind Direction
Precip. Accum. Total (mm)
Precip. Rate (mm)
Pressure (hPa)
Solar Radiation (watts/m²)
UV Index

Photo-Documentation:




Conclusion:

"Based on the results of the tests conducted in three locations (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), Monitoring noise levels are under the norm of Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments".

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
Shota Rustaveli University	Day 1 08.07.2019	Morning	09:19	**49.80**	**50.22**	**50**
		Noon	13:37	**50.65**		
		Evening	18.33	**48.57**	**48.57**	**45**
	Day 2 09.07.2019	Morning	09:22	**50.14**	**50.52**	**50**
		Noon	14:08	**50.90**		
		Evening	19:28	**47.88**	**47.88**	**45**
	Day 3 10.07.2019	Morning	09:19	**49.52**	**50.96**	**50**
		Noon	14:30	**52.40**		
		Evening	18:09	**49.30**	**49.30**	**45**
	Day 4 11.07.2019	Morning	09:21	**51.17**	**51.60**	**50**
		Noon	14.:09	**52.03**		
		Evening	18:17	**47.45**	**47.45**	**45**
	Day 5 12.07.2019	Morning	09:30	**49.62**	**50.61**	**50**
		Noon	14:43	**51.61**		
		Evening	18:09	**48.47**	**48.47**	**45**

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
The Magnolia Hotel	Day 1 08.07.2019	Morning	09:53	**48.79**	**49.73**	**50**
		Noon	14:08	**50.67**		
		Evening	18:33	**49.90**	**49.90**	**45**
	Day 2 09.07.2019	Morning	19:19	**48.18**	**48.70**	**50**
		Noon	14:13	**49.23**		
		Evening	18:07	**48.57**	**48.57**	**45**
	Day 3 10.07.2019	Morning	09:43	**48.97**	**51.24**	**50**
		Noon	14:37	**53.51**		
		Evening	18:31	**50.17**	**50.17**	**45**
	Day 4 11.07.2019	Morning	09:34	**49.95**	**50.83**	**50**
		Noon	13:36	**51.71**		
		Evening	18:02	**49.41**	**49.41**	**45**
	Day 5 12.07.2019	Morning	09:31	**50.37**	**50.85**	**50**
		Noon	14:48	**51.33**		
		Evening	18:07	**48.20**	**48.20**	**45**

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
School-lyceum "Taoba"	Day 1 08.07.2019	Morning	09:31	**49.70**	**52.32**	**50**
		Noon	13:17	**54.98**		
		Evening	18:35	**49.77**	**49.77**	**45**
	Day 2 09.07.2019	Morning	09:22	**49.78**	**50.17**	**50**
		Noon	14:41	**50.56**		
		Evening	18:41	**49.32**	**49.32**	**45**
	Day 3 10.07.2019	Morning	09:37	**49.49**	**50.58**	**50**
		Noon	14:52	**51.68**		
		Evening	18:31	**50.99**	**50.99**	**45**
	Day 4 11.07.2019	Morning	09:55	**50.06**	**49.62**	**50**
		Noon	14:09	**49.19**		
		Evening	17:12	**52.59**	**52.59**	**45**
	Day 5 12.07.2019	Morning	09:21	**50.29**	**50.51**	**50**
		Noon	14:47	**50.73**		
		Evening	18:08	**49.84**	**49.84**	**45**

1.

8.1.2 August

Report on: Noise Measurement

Monitoring Test

Period of Inspection: 20190812 - 20190816	**Project: Coastal Protection Batumi**	**Locations :**	**1. School-lyceum "Taoba"** **2. Shota Rustaveli University** **3. The Magnolia Hotel**

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted noise measurements in order to identify and quantify noise level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - noise Levels; the samples have been taken at three location (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), three times a day (morning, afternoon and evening) during five days, during 30 to 46 seconds for each taken sample.

Device Name: **Sound Level Meter PCE-322A**

Noise Standards: Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments"

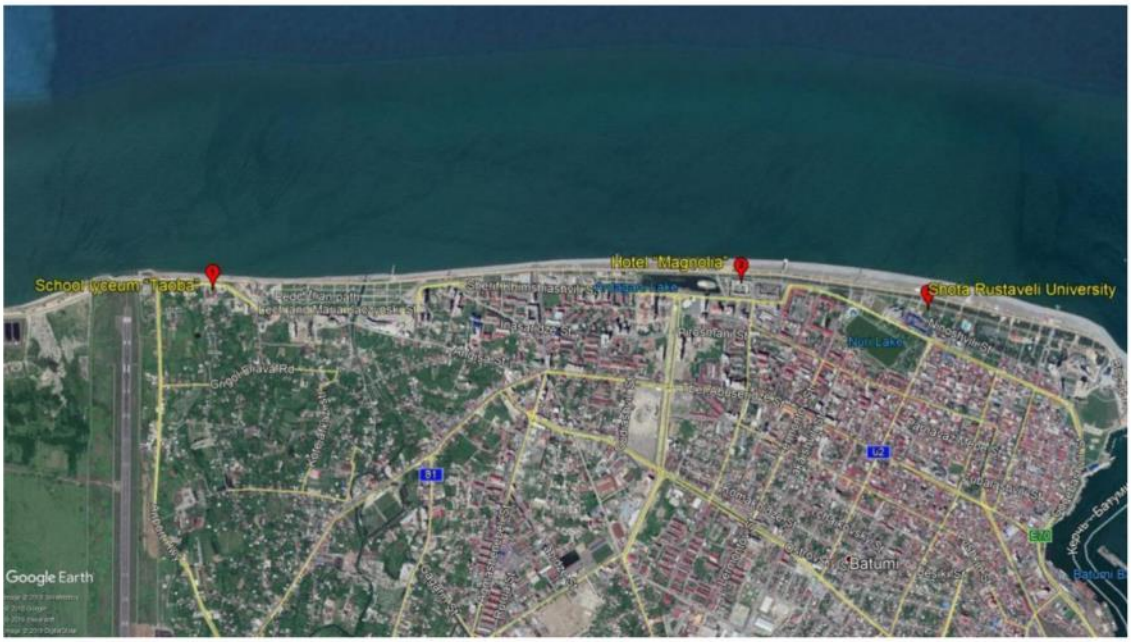
Permissible norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments

N	The applied functions of the spaces and areas	Admissible norms		
		L day (DBA)		
		Day	Evening	L night (DBA)
1	Studying establishments and reading rooms	35	35	35
2	The treatment cabinets of the medical establishments	40	40	40
3	Residential and sleeping areas	35	30	30
4	The treatment and rehabilitation rooms of the inpatient medical establishments	35	30	30
5	The rooms of the hotel/guest houses/motels	40	35	35
6	Trading halls and guest rooms	55	55	55
7	Restaurants, bars, cafes	50	50	50
8	Spectator/listeners' hall	30	30	30
9	Sport halls and pools	55	55	55
10	Small offices (≤100 m^3), working premises and premises	40	40	40

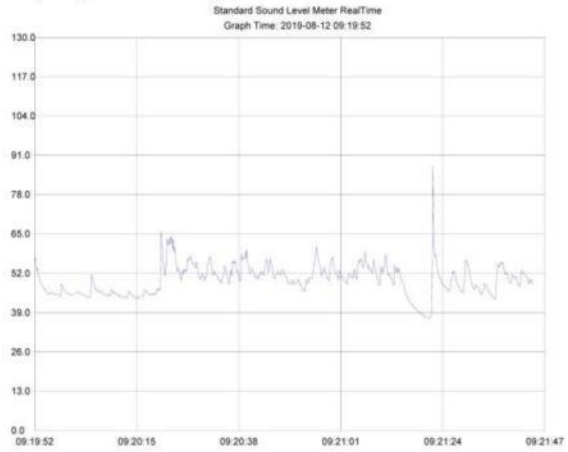
	without office technique			
11	Large offices (≥100 m³), working premises and premised with office technique	45	45	45
12	Conversation premises	35	35	35
13	Territories, distanced from the low multistoried residential houses (number of the floors >6), medical establishments, children and social service objects	50	45	40
14	Territories, distanced from the multistoried residential houses (number of the floors >6), cultural, educational, administrative and scientific establishments	55	50	45
15	Territories, distanced from the hotels, trading, service, sport and social organizations	60	55	50

Note: The threshold #13 and highlighted in the table (yellow) is thresholds, which are considered.

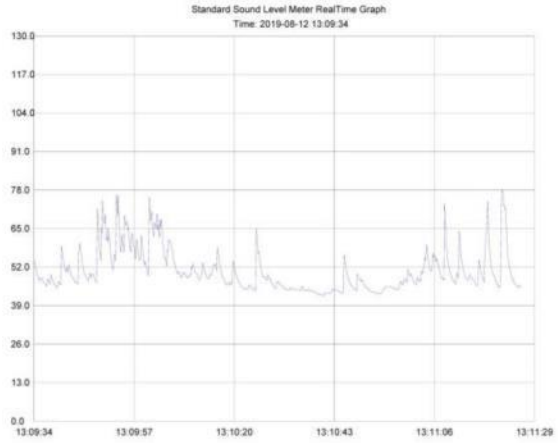
Map with samples points:



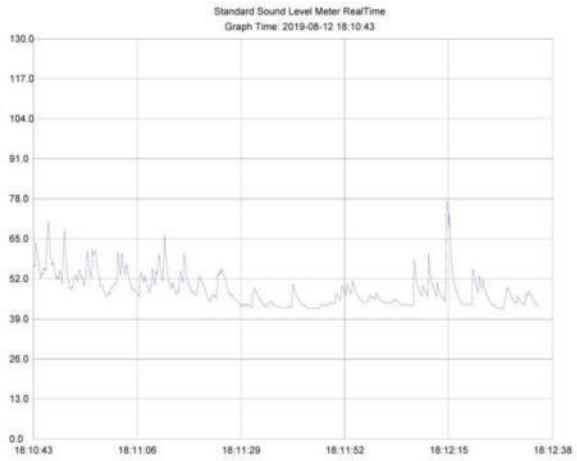
Test results for School-lyceum "Taoba":
Day 1 (12.08.2019):



Start Time: 12-08-2019,09:19:52
Maxnum: 87.40 12-08-2019,09:21:22
Minnum: 37.10 12-08-2019,09:21:21
Sample Rate: 0.10
Average: 49.80

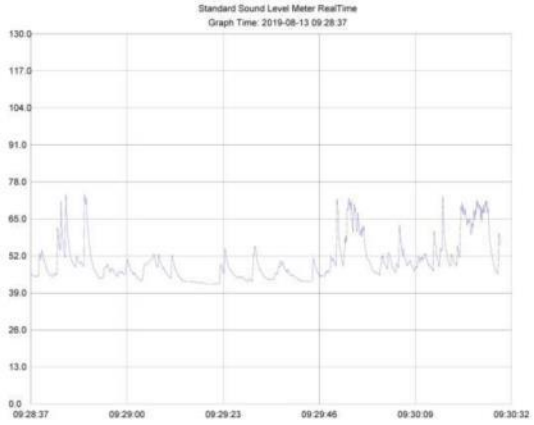


Start Time: 12-08-2019,13:09:34
Maxnum: 78.00 12-08-2019,13:11:21
Minnum: 42.50 12-08-2019,13:10:39
Sample Rate: 0.10
Average: 50.65

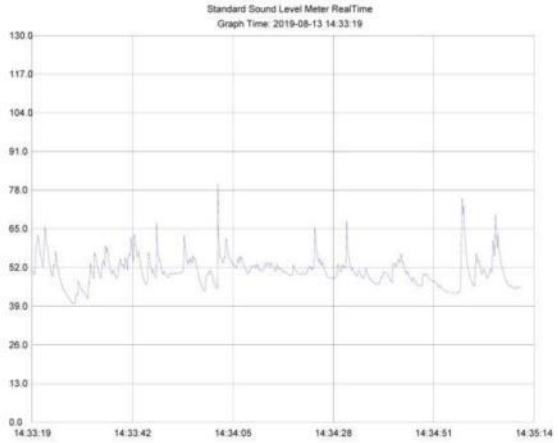


Start Time: 12-08-2019,18:10:43
Maxnum: 77.00 12-08-2019,18:12:14
Minnum: 42.10 12-08-2019,18:12:27
Sample Rate: 0.10
Average: 48.57

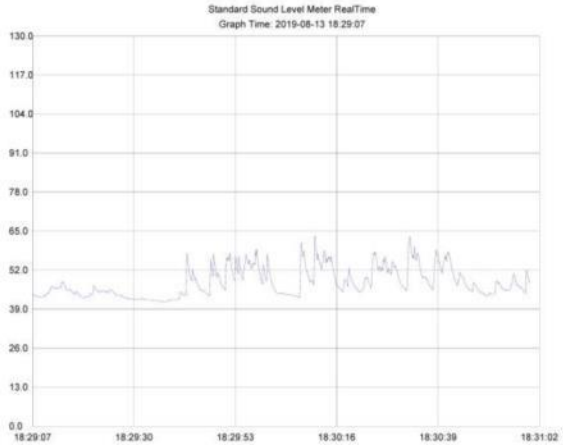
Day 2 (13.08.2019):



Start Time: 13-08-2019,09:28:37
Maxnum: 73.60 13-08-2019,09:28:50
Minnum: 42.10 13-08-2019,09:29:18
Sample Rate: 0.10
Average: 50.14

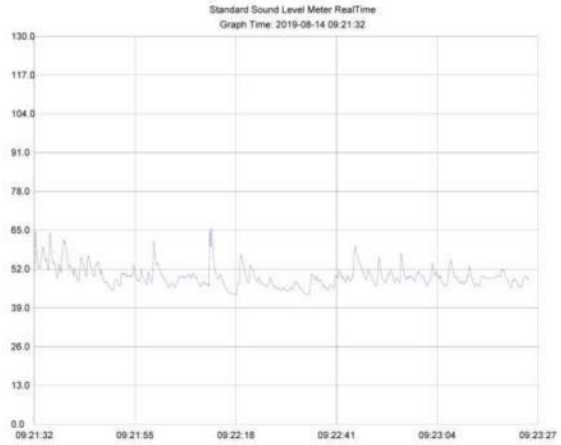


Start Time: 13-05-2019,14:33:19
Maxnum: 80.00 13-05-2019,14:34:00
Minnum: 39.80 13-05-2019,14:33:28
Sample Rate: 0.10
Average: 50.90

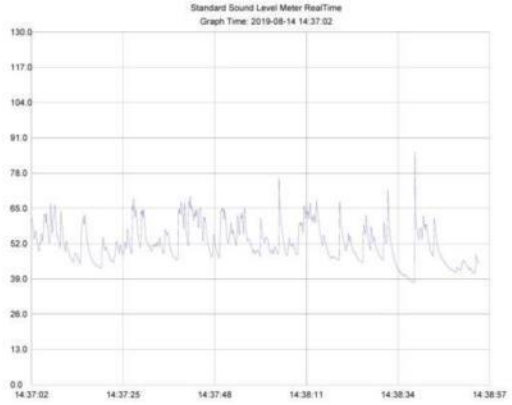


Start Time: 13-08-2019,18:29:07
Maxnum: 63.50 13-08-2019,18:30:09
Minnum: 41.50 13-08-2019,18:29:38
Sample Rate: 0.10
Average: 47.88

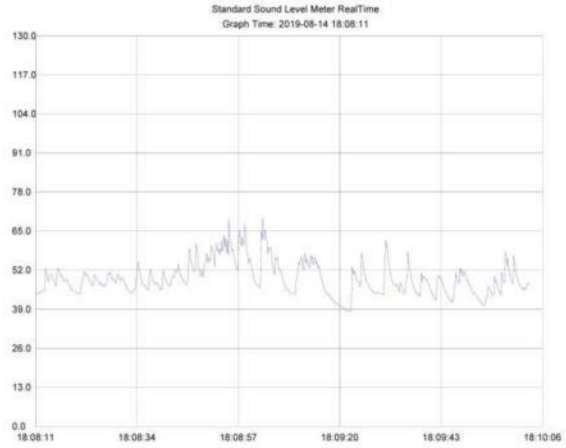
Day 3 (14.08.2019):



Start Time: 14-08-2019,09:21:32
Maxnum: 65.50 14-08-2019,09:22:10
Minnum: 43.40 14-08-2019,09:22:33
Sample Rate: 0.10
Average: 49.52

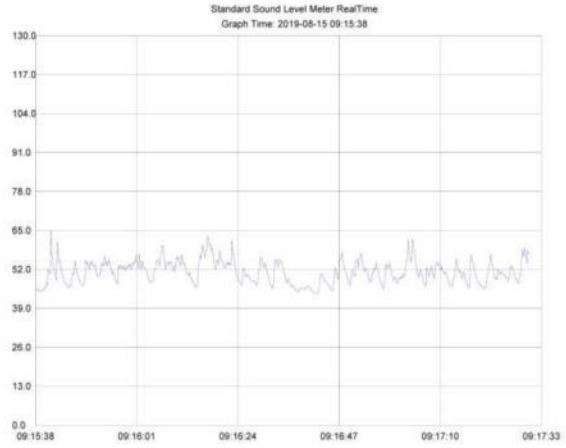


Start Time: 14-08-2019,14:37:02
Maxnum: 85.70 14-08-2019,14:38:39
Minnum: 37.80 14-08-2019,14:38:40
Sample Rate: 0.10
Average: 52.40

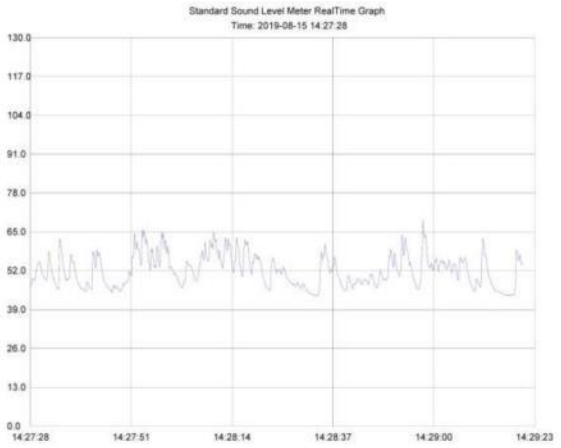


Start Time: 14-08-2019,18:08:11
Maxnum: 69.00 14-08-2019,18:08:54
Minnum: 38.30 14-08-2019,18:09:22
Sample Rate: 0.10
Average: 49.30

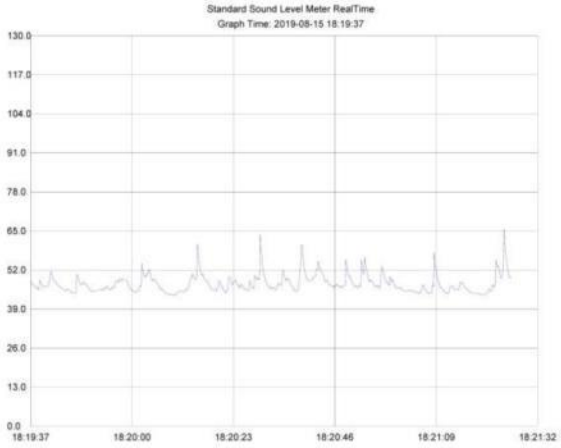
Day 4 (15.08.2019):



Start Time: 15-08-2019,09:15:38
Maxnum: 65.00 15-08-2019,09:15:42
Minnum: 44.00 15-08-2019,09:16:41
Sample Rate: 0.10
Average: 51.17

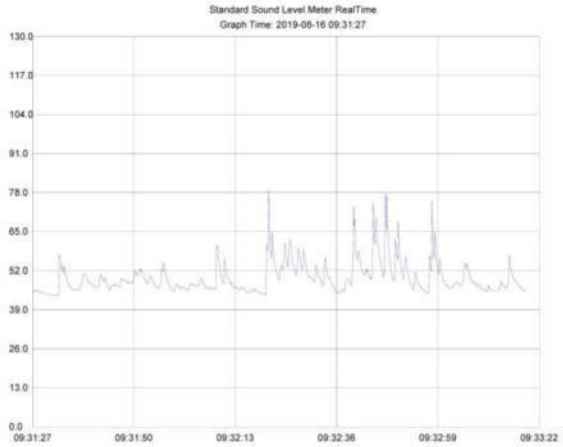


Start Time: 15-08-2019,14:27:28
Maxnum: 68.90 15-08-2019,14:28:56
Minnum: 43.60 15-08-2019,14:29:16
Sample Rate: 0.10
Average: 52.03

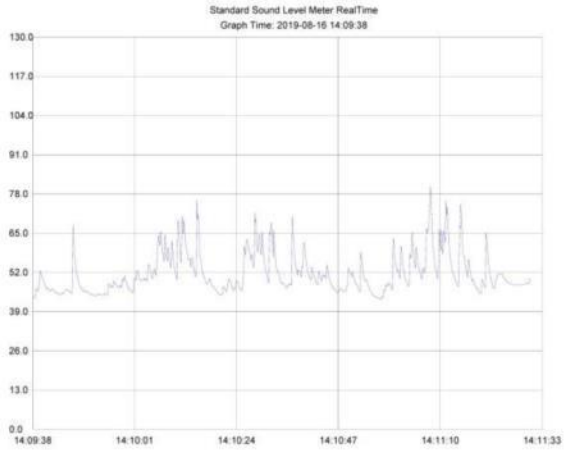


Start Time: 15-08-2019,18:19:37
Maxnum: 65.80 15-08-2019,18:21:23
Minnum: 43.70 15-08-2019,18:20:11
Sample Rate: 0.10
Average: 47.45

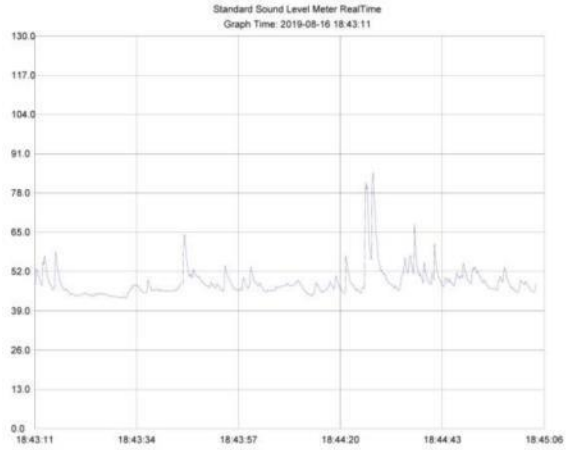
Day 5 (16.08.2019):



Start Time: 16-08-2019,09:31:27
Maxnum: 78.80 16-08-2019,09:32:22
Minnum: 43.90 16-08-2019,09:31:33
Sample Rate: 0.10
Average: 49.62



Start Time: 16-08-2019,14:09:38
Maxnum: 80.10 16-08-2019,14:11:07
Minnum: 43.20 16-08-2019,14:10:58
Sample Rate: 0.10
Average: 51.61

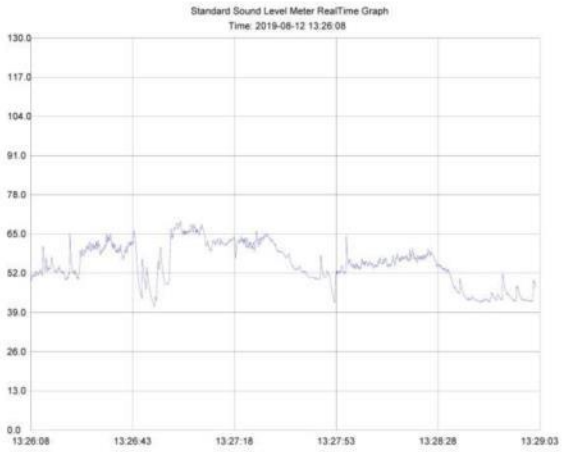


Start Time: 16-08-2019,18:43:11
Maxnum: 84.80 16-08-2019,18:44:27
Minnum: 43.30 16-08-2019,18:43:30
Sample Rate: 0.10
Average: 48.47

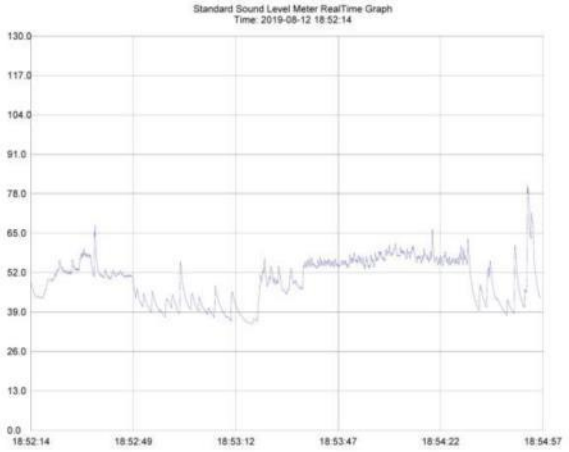
Test results for Shota Rustaveli University:

Day 1 (12.08.2019):

Start Time: 12-08-2019,09:32:17
Maxnum: 73.40 12-08-2019,09:35:30
Minnum: 37.10 12-08-2019,09:33:27
Sample Rate: 0.10
Average: 49.70

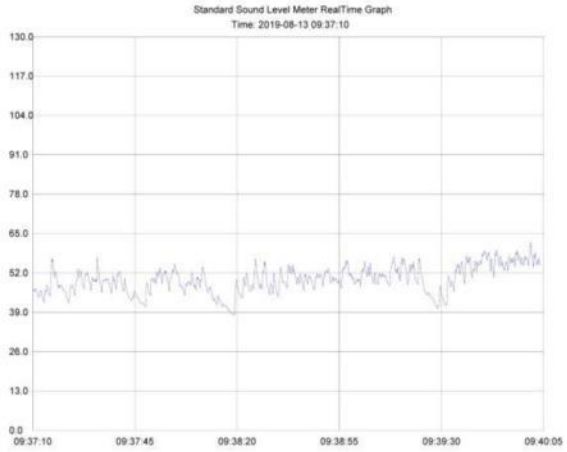


Start Time: 12-08-2019,13:26:08
Maxnum: 69.30 12-08-2019,13:27:00
Minnum: 41.10 12-08-2019,13:26:50
Sample Rate: 0.10
Average: 54.98

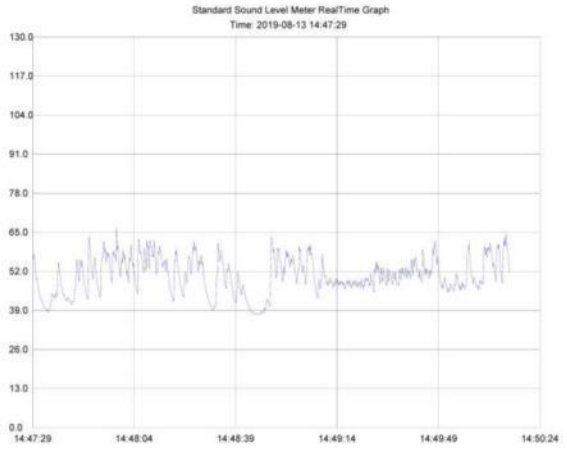


Start Time: 12-08-2019,18:52:14
Maxnum: 80.80 12-08-2019,18:54:52
Minnum: 35.10 12-08-2019,18:53:07
Sample Rate: 0.10
Average: 49.77

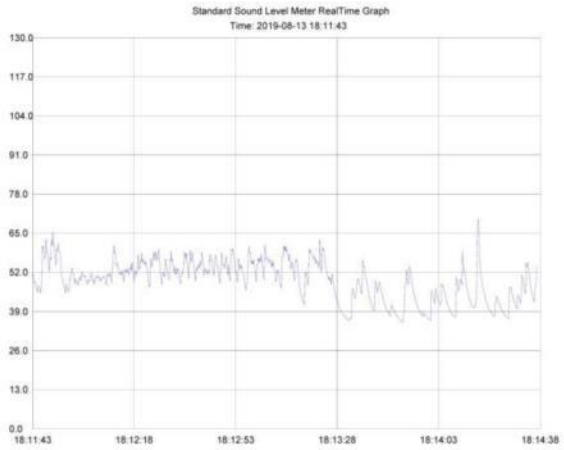
Day 2 (13.08.2019)



Start Time: 13-08-2019,09:37:10
Maxnum: 62.30 13-08-2019,09:39:59
Minnum: 38.10 13-08-2019,09:38:19
Sample Rate: 0.10
Average: 49.78

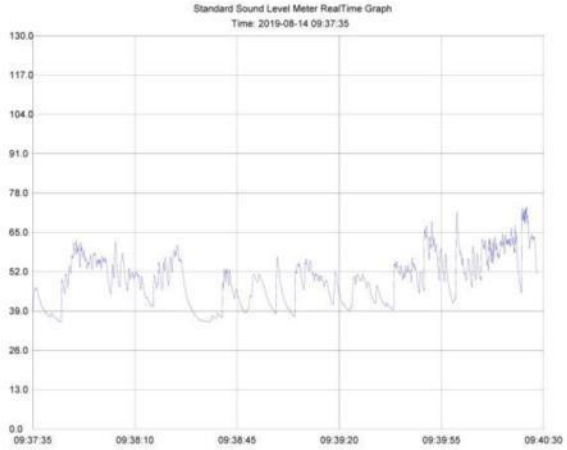


Start Time: 13-08-2019,14:47:29
Maxnum: 66.50 13-08-2019,14:47:58
Minnum: 37.60 13-08-2019,14:48:45
Sample Rate: 0.10
Average: 50.56

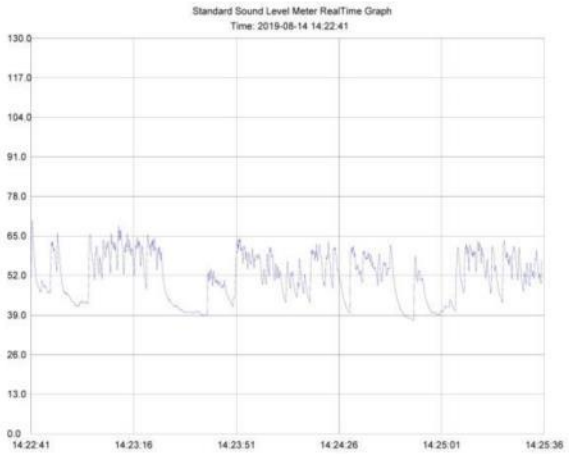


Start Time: 13-08-2019,18:11:43
Maxnum: 69.70 13-08-2019,18:14:18
Minnum: 35.60 13-08-2019,18:13:51
Sample Rate: 0.10
Average: 49.32

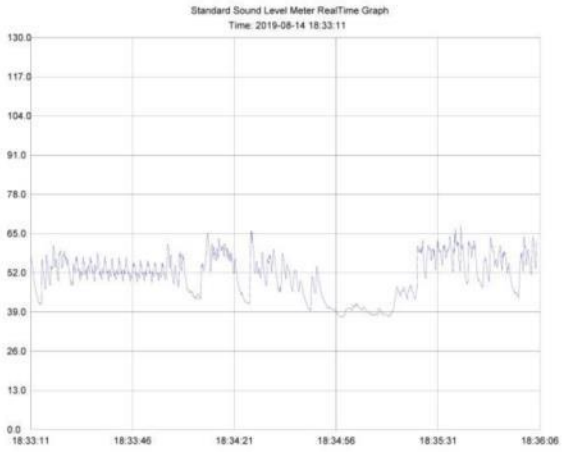
Day 3 (14.08.2019):



Start Time: 14-08-2019,09:37:35
Maxnum: 73.40 14-08-2019,09:40:22
Minnum: 35.30 14-08-2019,09:37:44
Sample Rate: 0.10
Average: 49.49

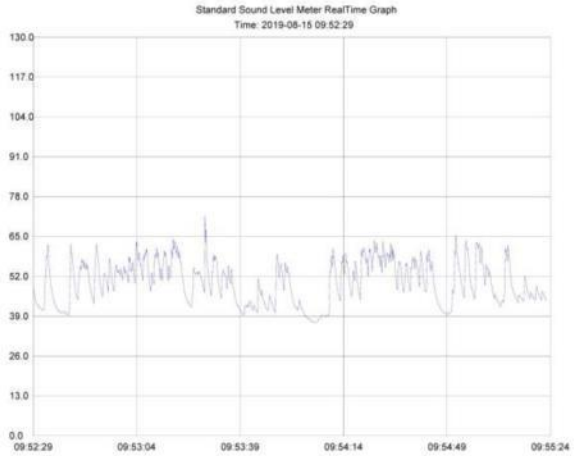


Start Time: 14-08-2019,14:22:41
Maxnum: 70.20 14-08-2019,14:22:42
Minnum: 37.40 14-08-2019,14:24:50
Sample Rate: 0.10
Average: 51.68



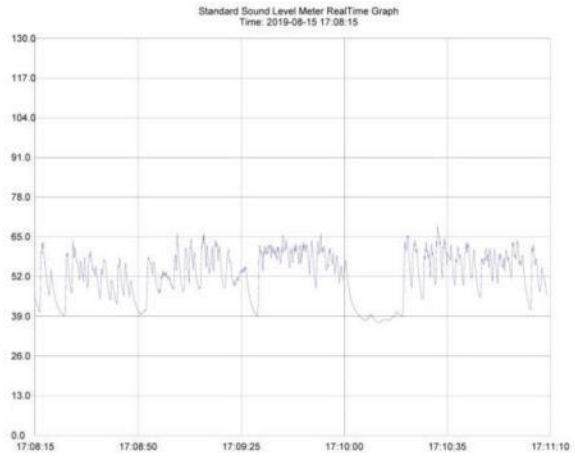
Start Time: 14-08-2019,18:33:11
Maxnum: 67.50 14-08-2019,18:35:41
Minnum: 37.30 14-08-2019,18:34:58
Sample Rate: 0.10
Average: 50.99

Day 4 (15.08.2019):



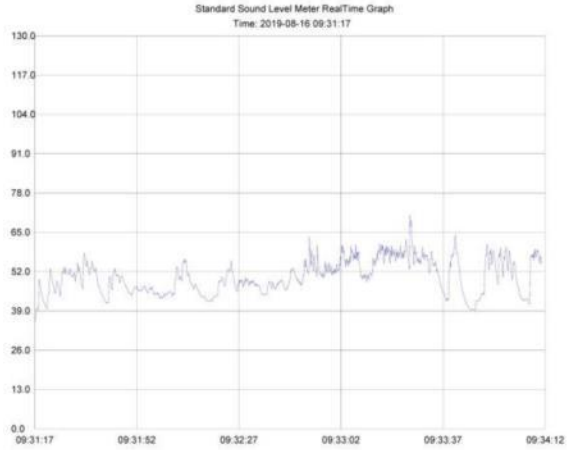
Start Time: 15-08-2019,09:52:29
Maxnum: 71.60 15-08-2019,09:53:26
Minnum: 37.00 15-08-2019,09:54:04
Sample Rate: 0.10
Average: 50.06

Start Time: 15-08-2019,14:54:19
Maxnum: 71.10 15-08-2019,14:57:10
Minnum: 37.60 15-08-2019,14:55:22
Sample Rate: 0.10
Average: 49.19



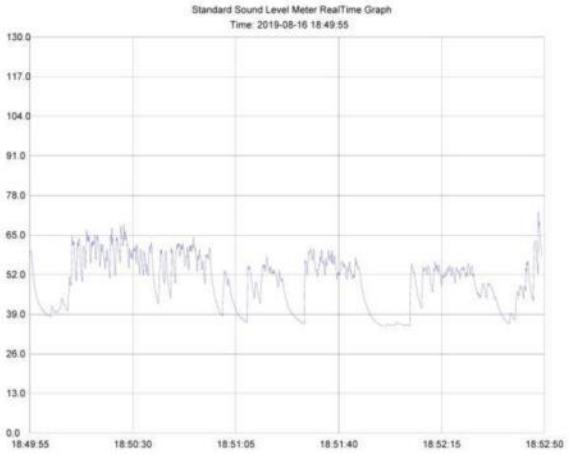
Start Time: 15-08-2019,17:08:15
Maxnum: 68.70 15-08-2019,17:10:31
Minnum: 37.00 15-08-2019,17:10:11
Sample Rate: 0.10
Average: 52.59

Day 5 (16.08.2019):



Start Time: 16-08-2019,09:31:17
Maxnum: 70.60 16-08-2019,09:33:27
Minnum: 35.80 15-08-2019,09:31:17
Sample Rate: 0.10
Average: 50.29

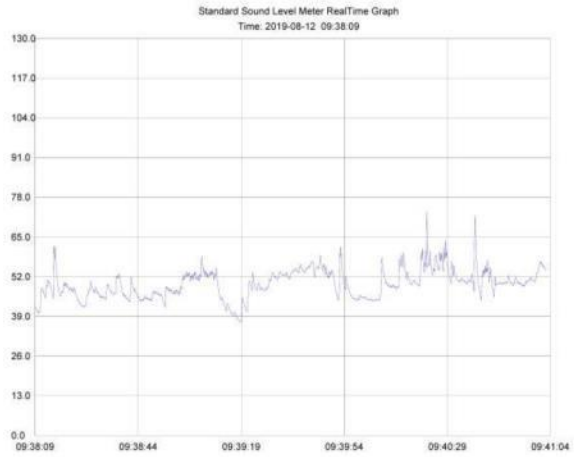
Start Time: 16-08-2019,14:19:28
Maxnum: 70.60 16-08-2019,14:21:29
Minnum: 39.20 16-08-2019,14:21:38
Sample Rate: 0.10
Average: 50.73



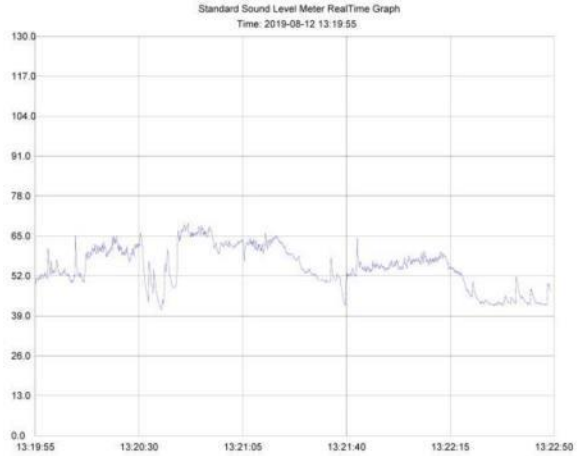
Start Time: 16-08-2019,18:49:55
Maxnum: 72.80 16-08-2019,18:52:48
Minnum: 35.00 16-08-2019,18:51:56
Sample Rate: 0.10
Average: 49.84

Test results for The Magnolia Hotel:

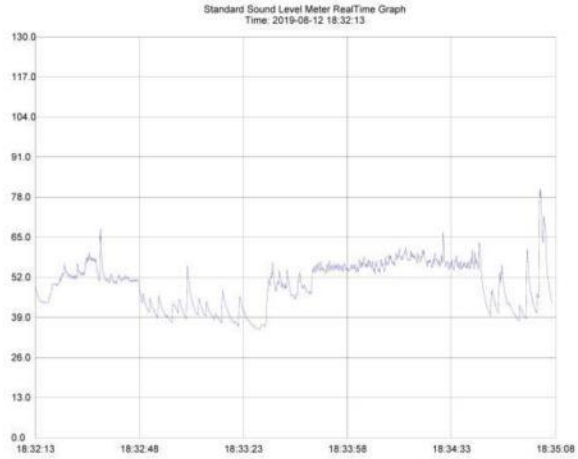
Day 1 (12.08.2019):



Start Time: 12-08-2019,09:38:09
Maxnum: 73.40 12-08-2019,09:40:21
Minnum: 37.10 12-08-2019,09:39:19
Sample Rate: 0.10
Average: 49.70

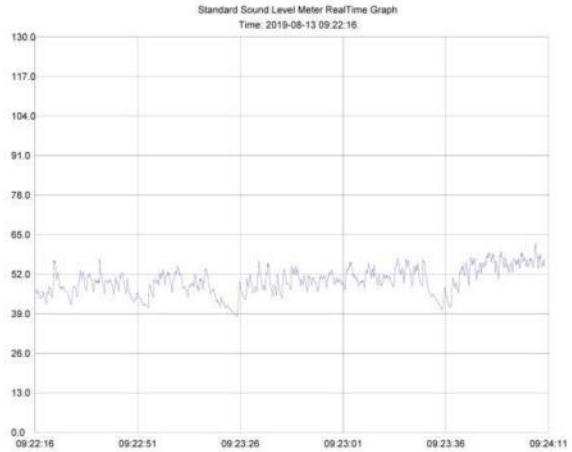


Start Time: 12-08-2019,13:19:55
Maxnum: 69.30 12-08-2019,13:20:49
Minnum: 41.10 12-08-2019,13:20:38
Sample Rate: 0.10
Average: 54.98

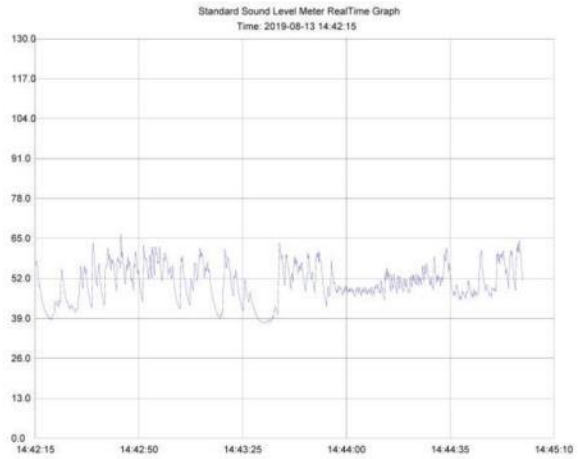


Start Time: 12-08-2019,18:32:13
Maxnum: 80.80 12-08-2019,18:35:00
Minnum: 35.10 12-08-2019,18:33:27
Sample Rate: 0.10
Average: 49.77

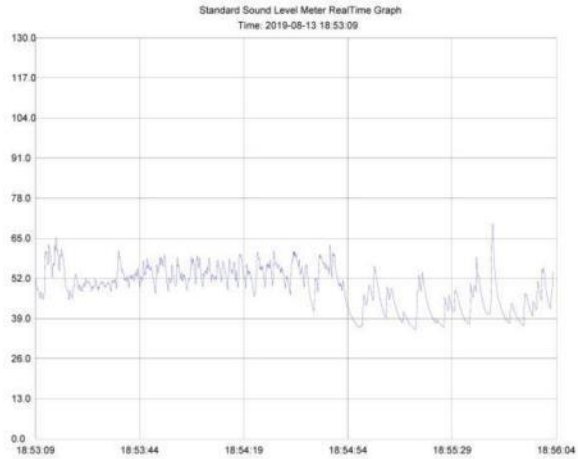
Day 2 (13.08.2019):



Start Time: 13-08-2019,09:22:16
Maxnum: 62.30 13-08-2019,09:24:07
Minnum: 38.10 13-08-2019,09:23:24
Sample Rate: 0.10
Average: 49.78

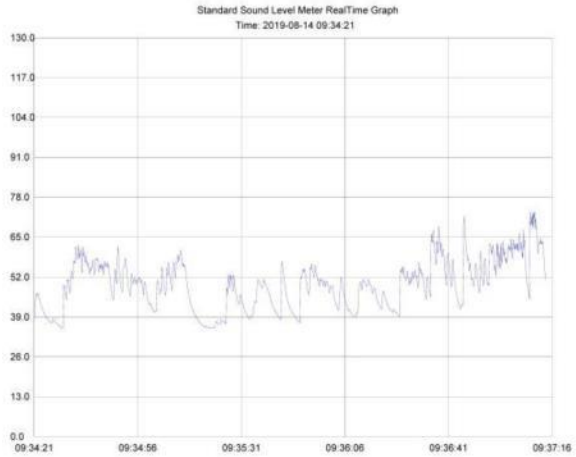


Start Time: 13-08-2019,14:42:15
Maxnum: 66.50 13-08-2019,14:42:42
Minnum: 37.60 13-08-2019,14:43:34
Sample Rate: 0.10
Average: 50.56

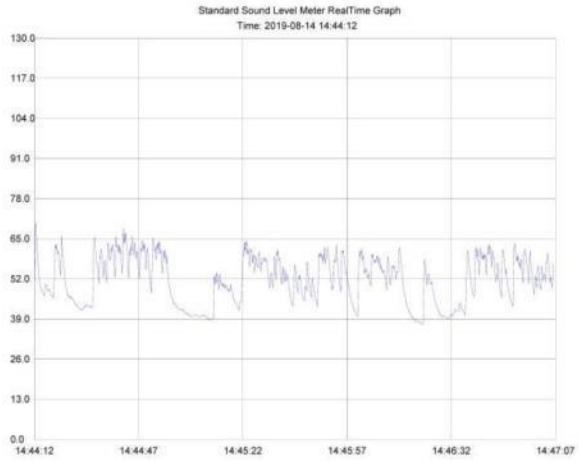


Start Time: 13-08-2019,18:53:09
Maxnum: 69.70 13-08-2019,18:55:43
Minnum: 35.60 13-08-2019,18:55:18
Sample Rate: 0.10
Average: 49.32

Day 3 (14.08.2019):



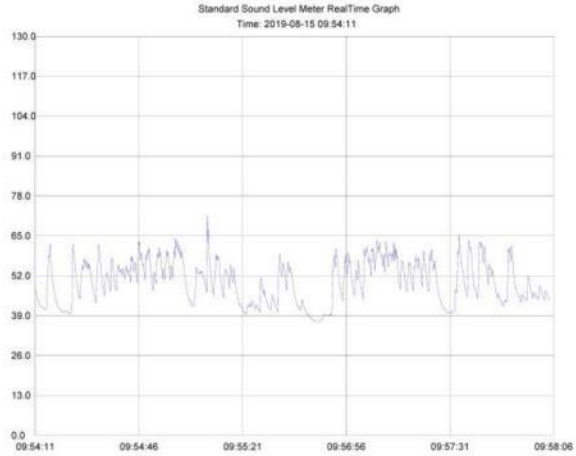
Start Time: 14-08-2019,09:34:21
Maxnum: 73.40 14-08-2019,09:37:07
Minnum: 35.30 14-08-2019,09:35:22
Sample Rate: 0.10
Average: 49.49



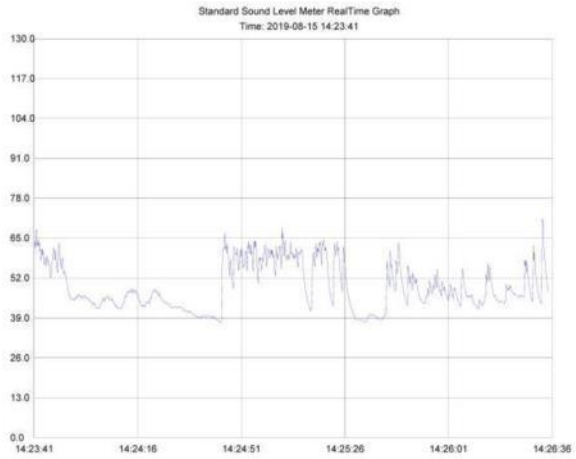
Start Time: 14-08-2019,14:44:12
Maxnum: 70.20 14-08-2019,14:44:13
Minnum: 37.40 14-08-2019,14:46:22
Sample Rate: 0.10
Average: 51.68

Start Time: 14-08-2019,18:11:32
Maxnum: 67.50 14-08-2019,18:13:59
Minnum: 37.30 14-08-2019,18:13:19
Sample Rate: 0.10
Average: 50.99

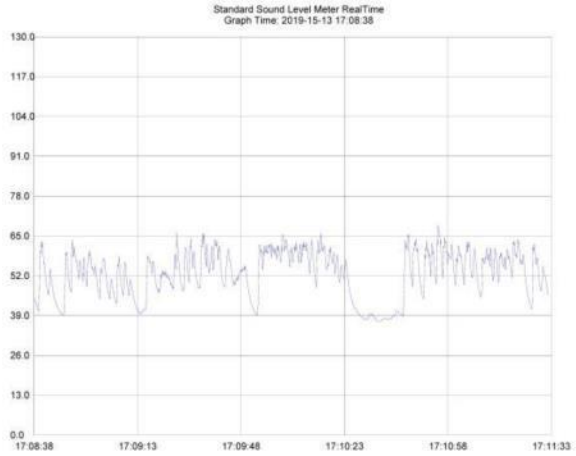
Day 4 (15.08.2019):



Start Time: 15-08-2019,09:54:11
Maxnum: 71.60 15-08-2019,09:55:10
Minnum: 37.00 15-08-2019,09:56:45
Sample Rate: 0.10
Average: 50.06

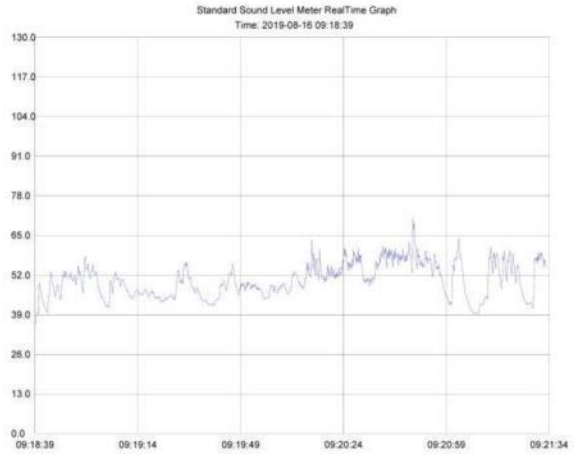


Start Time: 15-08-2019,14:23:41
Maxnum: 71.10 15-08-2019,14:26:33
Minnum: 37.60 15-08-2019,14:24:45
Sample Rate: 0.10
Average: 49.19

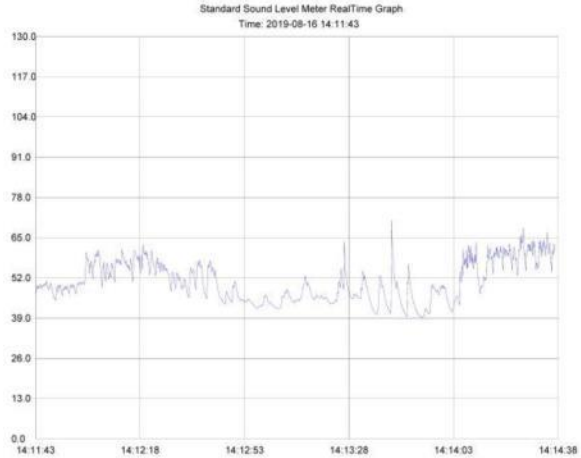


Start Time: 15-08-2019,17:08:38
Maxnum: 68.70 15-08-2019,17:10:55
Minnum: 37.00 15-08-2019,17:10:34
Sample Rate: 0.10
Average: 52.59

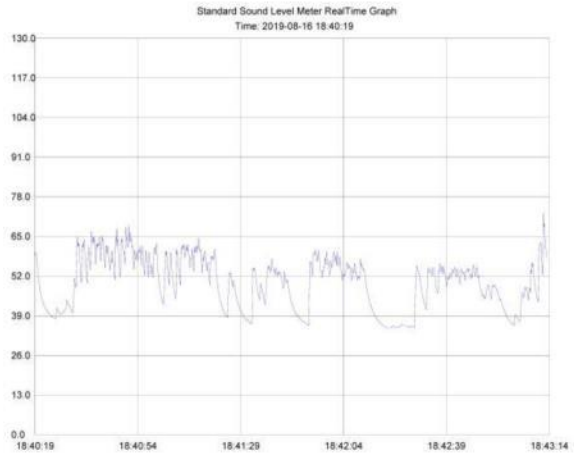
Day 5 (16.08.2019):



Start Time: 16-08-2019,09:18:39
Maxnum: 70.60 16-08-2019,09:20:47
Minnum: 35.80 16-08-2019,09:21:12
Sample Rate: 0.10
Average: 50.29



Start Time: 16-08-2019,14:11:43
Maxnum: 70.60 16-08-2019,14:13:41
Minnum: 39.20 16-08-2019,14:13:49
Sample Rate: 0.10
Average: 50.73



Start Time: 16-08-2019,18:40:19
Maxnum: 72.80 16-08-2019,18:43:12
Minnum: 35.00 16-08-2019,18:42:20
Sample Rate: 0.10
Average: 49.84

Meteorological Data (12.08.2019 - 16.08.2019) Batumi, Georgia

Weather History & Observations

2019	Temp. (°C)			Dew Point (°C)			Humidity (%)			Pressure (hPa)		Wind (km/h)			Precip. (mm)
Aug	high	avg	low	high	avg	low	high	avg	low	high	low	high	avg	low	sum
12	26.9	24.1	20.0	21.0	19.6	17.7	93	76	66	1,019.64	1,017.27	15.1	5.1	0.0	0.00
13	27.2	24.5	20.4	20.8	19.7	18.6	92	75	62	1,017.95	1,013.55	16.2	4.6	0.0	0.00
14	27.3	25.0	19.5	22.3	21.1	18.7	95	79	69	1,014.22	1,009.14	17.6	5.1	0.0	0.00
15	28.6	26.1	21.7	23.9	22.3	19.9	93	80	67	1,010.50	1,006.43	40.7	9.3	0.0	0.00
16	27.3	24.6	22.0	24.0	22.9	20.6	97	90	80	1,012.87	1,007.45	15.8	3.2	0.0	4.06

August 12, 2019 - August 18, 2019

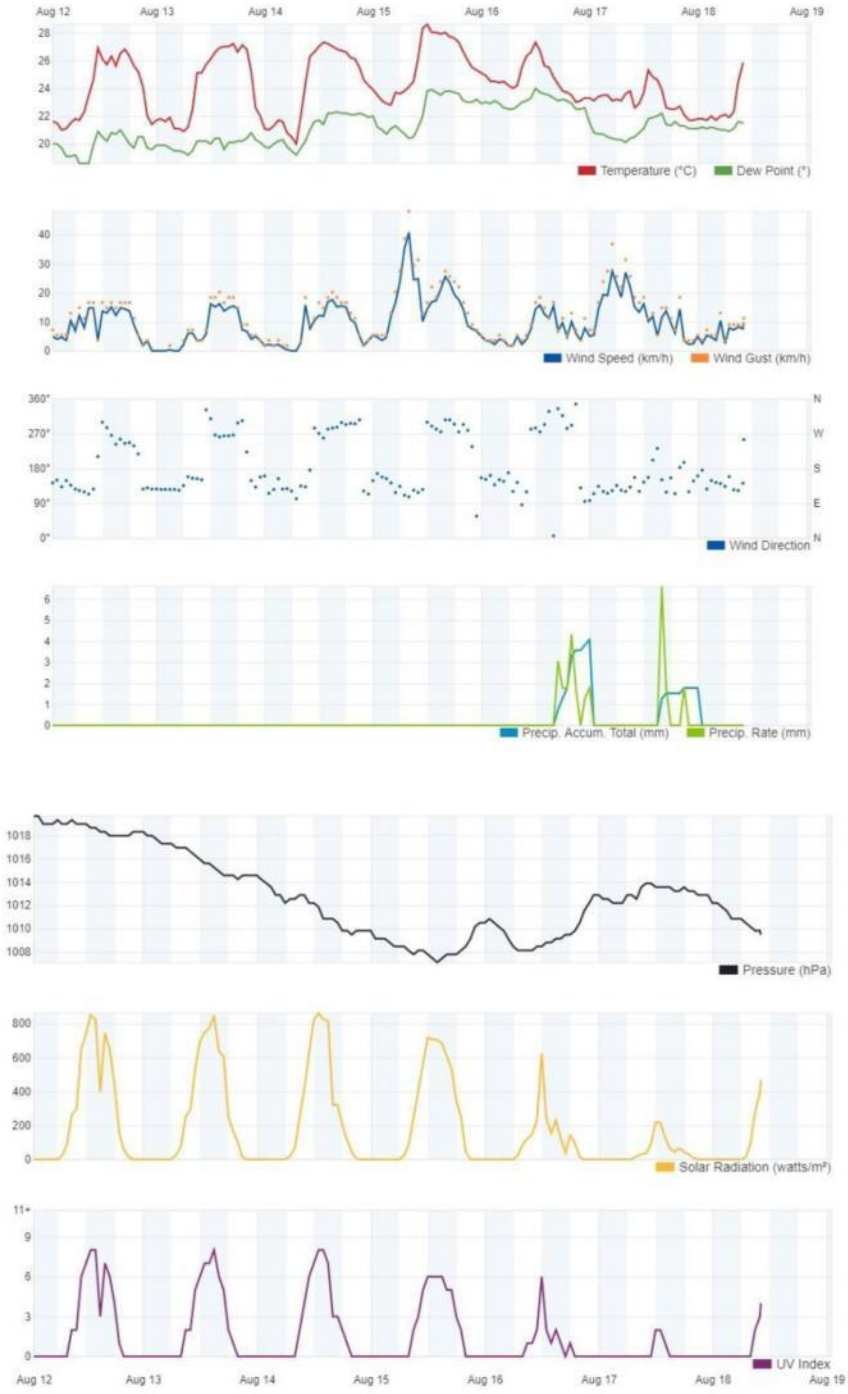


Photo-Documentation:




Conclusion:

"Based on the results of the tests conducted in three locations (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), Monitoring noise levels are under the norm of Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments".

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
Shota Rustaveli University	Day 1 12.08.2019	Morning	09:19	**49.80**	**50.22**	**50**
		Noon	13:09	**50.65**		
		Evening	18:10	**48.57**	**48.57**	**45**
	Day 2 13.08.2019	Morning	09:28	**50.14**	**50.52**	**50**
		Noon	14:33	**50.90**		
		Evening	18:29	**47.88**	**47.88**	**45**
	Day 3 14.08.2019	Morning	09:21	**49.52**	**50.96**	**50**
		Noon	14:37	**52.40**		
		Evening	18:08	**49.30**	**49.30**	**45**
	Day 4 15.08.2019	Morning	09:15	**51.17**	**51.60**	**50**
		Noon	14:27	**52.03**		
		Evening	18:19	**47.45**	**47.45**	**45**
	Day 5 16.08.2019	Morning	09:31	**49.62**	**50.61**	**50**
		Noon	14:09	**51.61**		
		Evening	18:43	**48.47**	**48.47**	**45**

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
The Magnolia Hotel	Day 1 12.08.2019	Morning	09:32	**49.70**	**52.34**	**50**
		Noon	13:26	**54.98**		
		Evening	18:52	**49.77**	**49.77**	**45**
	Day 2 13.08.2019	Morning	09:37	**49.78**	**50.17**	**50**
		Noon	14:47	**50.56**		
		Evening	18:11	**49.32**	**49.32**	**45**
	Day 3 14.08.2019	Morning	09:37	**49.49**	**50.58**	**50**
		Noon	14:22	**51.68**		
		Evening	18:33	**50.99**	**50.99**	**45**
	Day 4 15.08.2019	Morning	09:52	**50.06**	**49.62**	**50**
		Noon	14:54	**49.19**		
		Evening	17:08	**52.59**	**52.59**	**45**
	Day 5 16.08.2019	Morning	09:31	**50.29**	**50.51**	**50**
		Noon	14:19	**50.73**		
		Evening	18:49	**49.84**	**49.84**	**45**

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
School-lyceum "Taoba"	Day 1 12.08.2019	Morning	09:38	**49.70**	**52.32**	**50**
		Noon	13:19	**54.98**		
		Evening	18:32	**49.77**	**49.77**	**45**
	Day 2 13.08.2019	Morning	09:22	**49.78**	**50.17**	**50**
		Noon	14:42	**50.56**		
		Evening	18:53	**49.32**	**49.32**	**45**
	Day 3 14.08.2019	Morning	09:34	**49.49**	**50.58**	**50**
		Noon	14:44	**51.68**		
		Evening	18:11	**50.99**	**50.99**	**45**
	Day 4 15.08.2019	Morning	09:54	**50.06**	**49.62**	**50**
		Noon	14:23	**49.19**		
		Evening	17:08	**52.59**	**52.59**	**45**
	Day 5 16.08.2019	Morning	09:18	**50.29**	**50.51**	**50**
		Noon	14:11	**50.73**		
		Evening	18:40	**49.84**	**49.84**	**45**

8.1.3 September

Report on: Noise Measurement

Monitoring Test

Period of Inspection: 20190902 - 20190906	**Project: Coastal Protection Batumi**	**Locations :**	**1. School-lyceum "Taoba"** **2. Shota Rustaveli University** **3. The Magnolia Hotel**

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted noise measurements in order to identify and quantify noise level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - noise Levels; the samples have been taken at three location (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), three times a day (morning, afternoon and evening) during five days, during 30 to 46 seconds for each taken sample.

Device Name: **Sound Level Meter PCE-322A**

Noise Standards: Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments"

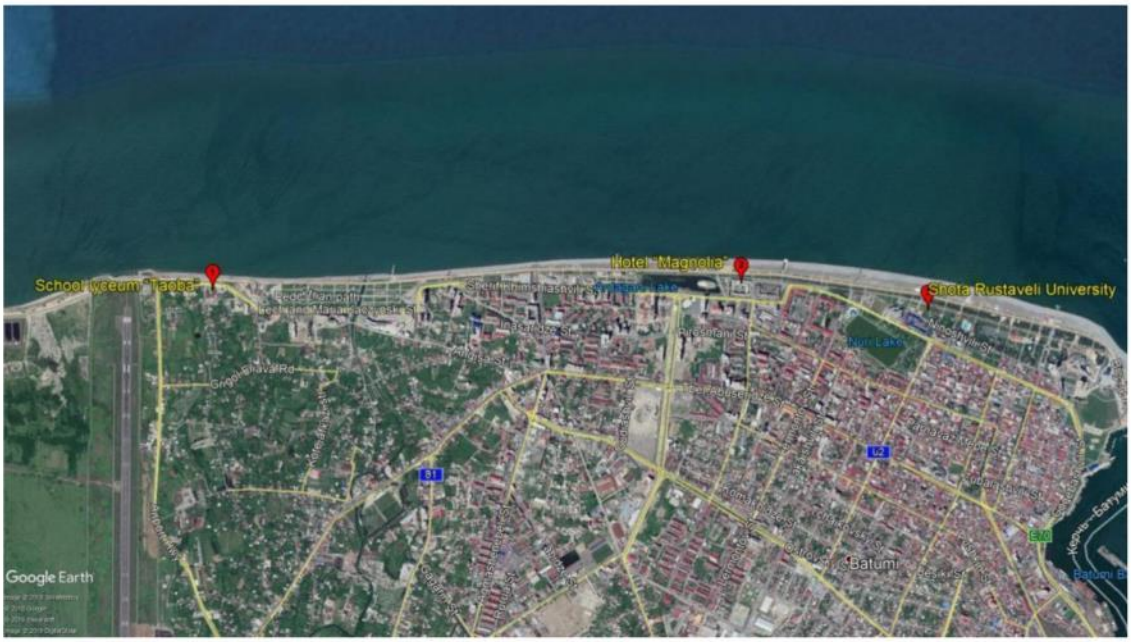
Permissible norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments

N	The applied functions of the spaces and areas	Admissible norms		
		L day (DBA)		
		Day	Evening	L night (DBA)
1	Studying establishments and reading rooms	35	35	35
2	The treatment cabinets of the medical establishments	40	40	40
3	Residential and sleeping areas	35	30	30
4	The treatment and rehabilitation rooms of the inpatient medical establishments	35	30	30
5	The rooms of the hotel/guest houses/motels	40	35	35
6	Trading halls and guest rooms	55	55	55
7	Restaurants, bars, cafes	50	50	50
8	Spectator/listeners' hall	30	30	30
9	Sport halls and pools	55	55	55
10	Small offices (≤100 m^3), working premises and premises	40	40	40

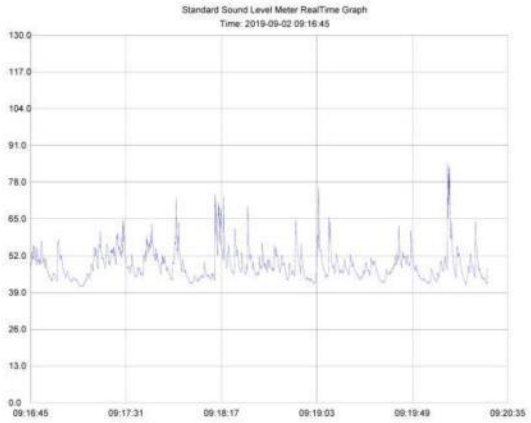
	without office technique			
11	Large offices (≥100 m³), working premises and premised with office technique	45	45	45
12	Conversation premises	35	35	35
13	Territories, distanced from the low multistoried residential houses (number of the floors >6), medical establishments, children and social service objects	50	45	40
14	Territories, distanced from the multistoried residential houses (number of the floors >6), cultural, educational, administrative and scientific establishments	55	50	45
15	Territories, distanced from the hotels, trading, service, sport and social organizations	60	55	50

Note: The threshold #13 and highlighted in the table (yellow) is thresholds, which are considered.

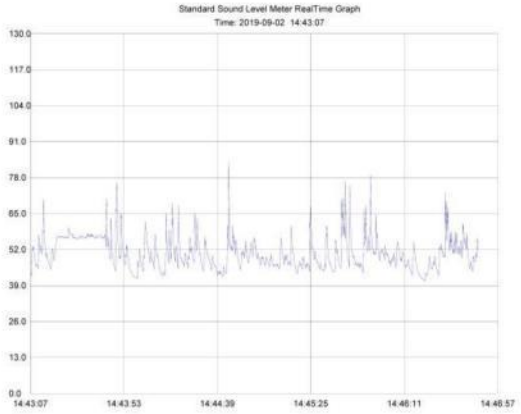
Map with samples points:



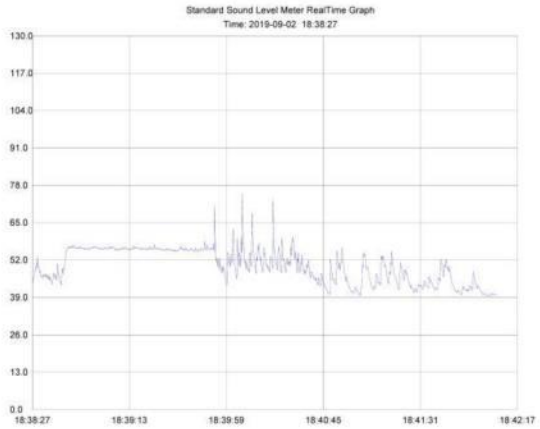
Test results for School-lyceum "Taoba":
Day 1 (02.09.2019):



Start Time: 02-09-2019,09:16:45
Maxnum: 85.10 02-09-2019,09:20:11
Minnum: 41.20 02-09-2019,09:17:08
Sample Rate: 0.10
Average: 48.79

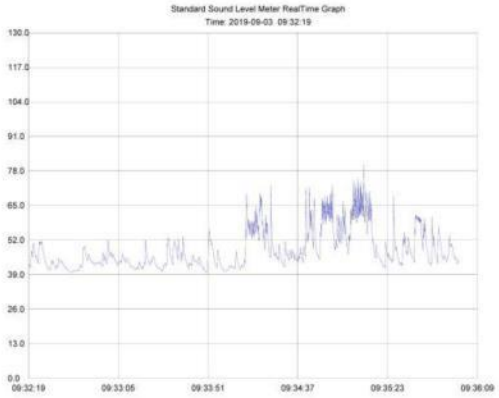


Start Time: 02-09-2019,14:43:07
Maxnum: 83.80 02-09-2019,14:44:47
Minnum: 40.60 02-09-2019,14:46:22
Sample Rate: 0.10
Average: 50.67

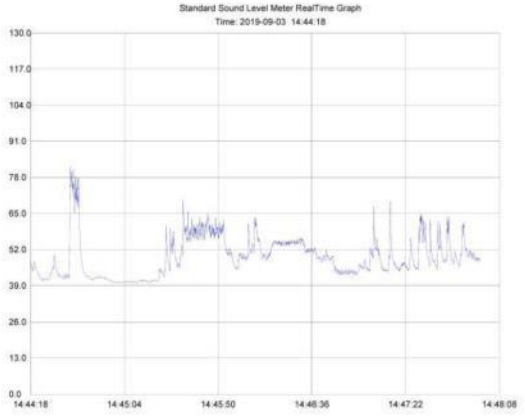


Start Time: 02-09-2019,18:38:27
Maxnum: 74.90 02-09-2019,18:40:09
Minnum: 39.30 02-09-2019,18:42:02
Sample Rate: 0.10
Average: 49.90

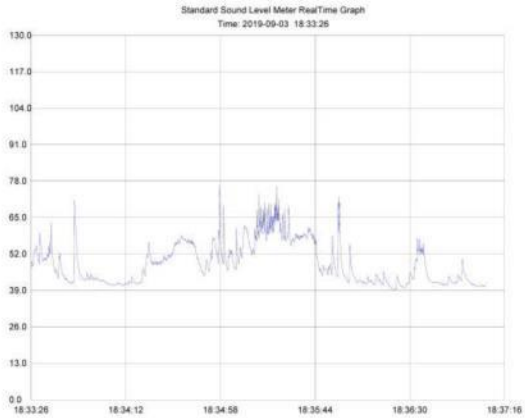
Day 2 (03.09.2019):



Start Time: 03-09-2019,09:32:19
Maxnum: 80.40 03-09-2019,09:35:07
Minnum: 39.70 03-09-2019,09:33:50
Sample Rate: 0.10
Average: 48.18

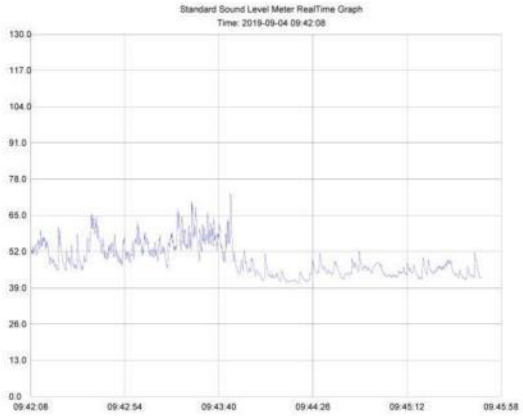


Start Time: 03-09-2019,14:44:18
Maxnum: 82.00 03-09-2019,14:44:38
Minnum: 39.90 03-09-2019,14:45:13
Sample Rate: 0.10
Average: 49.23

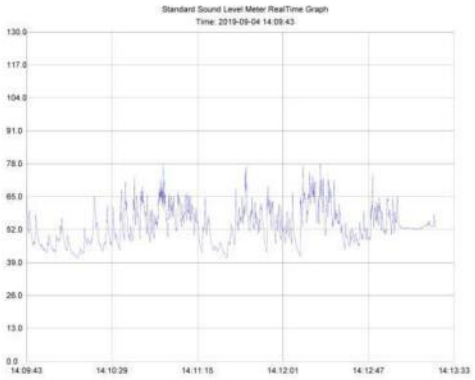


Start Time: 03-09-2019,18:33:26
Maxnum: 78.70 03-09-2019,18:34:58
Minnum: 39.20 03-09-2019,18:36:22
Sample Rate: 0.10
Average: 48.57

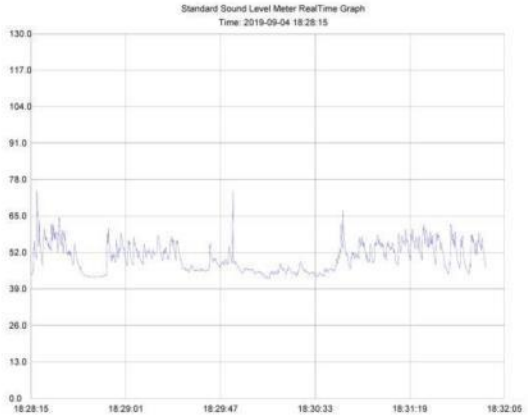
Day 3 (04.09.2019):



Start Time: 04-09-2019,09:42:08
Maxnum: 72.80 04-09-2019,09:43:47
Minnum: 40.90 04-09-2019,09:44:19
Sample Rate: 0.10
Average: 48.97

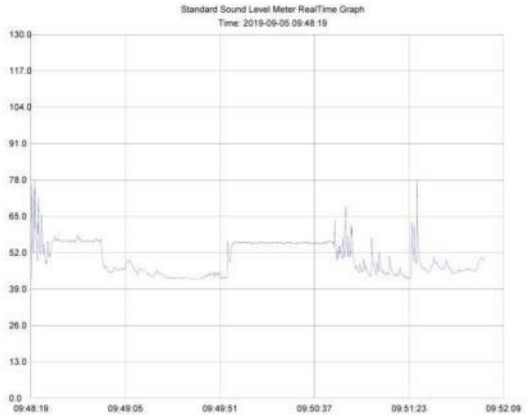


Start Time: 04-09-2019,14:09:43
Maxnum: 77.70 04-09-2019,14:10:52
Minnum: 40.90 04-09-2019,14:11:38
Sample Rate: 0.10
Average: 53.51

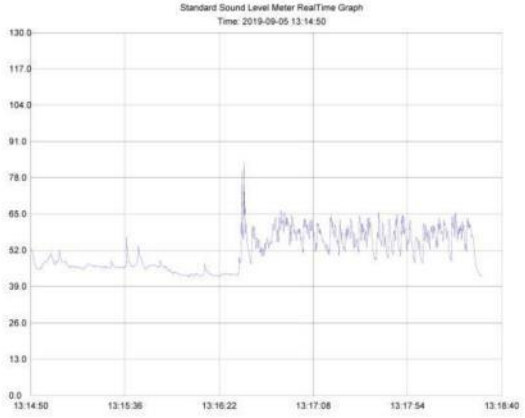


Start Time: 04-09-2019,18:28:15
Maxnum: 74.30 04-09-2019,18:29:55
Minnum: 42.70 04-09-2019,18:30:10
Sample Rate: 0.10
Average: 50.17

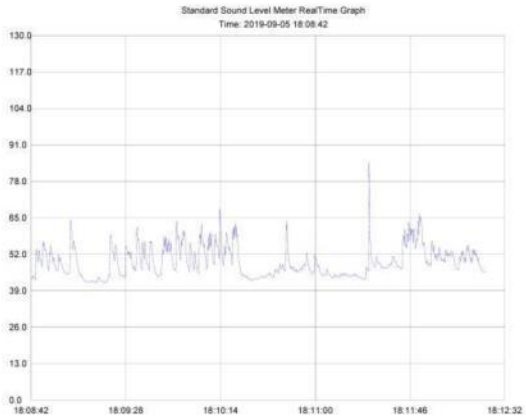
Day 4 (05.09.2019):



Start Time: 05-09-2019,09:48:19
Maxnum: 78.00 05-09-2019,09:48:23
Minnum: 42.30 05-09-2019,09:49:37
Sample Rate: 0.10
Average: 49.95

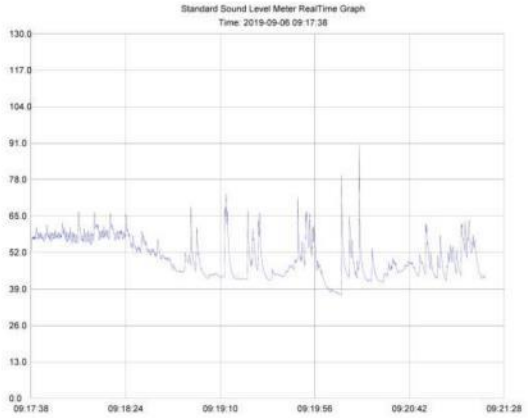


Start Time: 05-09-2019,13:14:50
Maxnum: 84.10 05-09-2019,13:16:36
Minnum: 42.60 05-09-2019,13:16:01
Sample Rate: 0.10
Average: 51.71

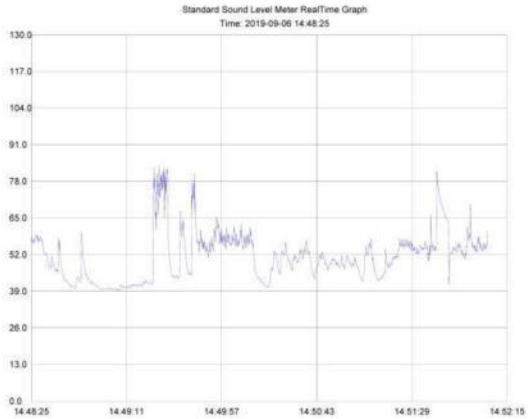


Start Time: 05-09-2019,18:08:42
Maxnum: 84.90 05-09-2019,18:11:27
Minnum: 41.90 05-09-2019,18:09:15
Sample Rate: 0.10
Average: 49.41

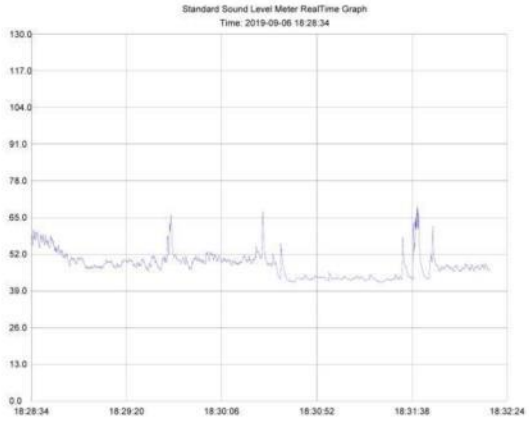
Day 5 (06.09.2019):



Start Time: 06-09-2019,09:17:38
Maxnum: 90.70 06-09-2019,09:20:17
Minnum: 36.80 06-09-2019,09:20:07
Sample Rate: 0.10
Average: 50.37



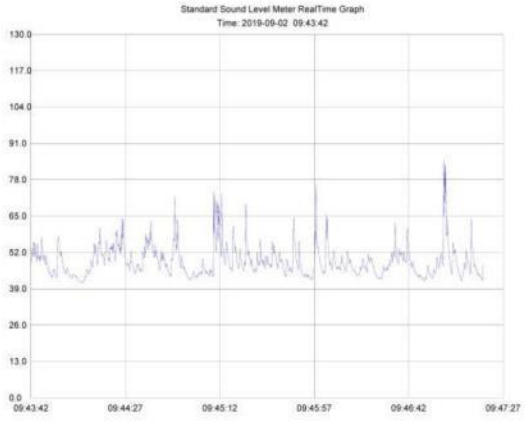
Start Time: 06-09-2019,14:48:25
Maxnum: 83.70 06-09-2019,14:49:32
Minnum: 39.40 06-09-2019,14:49:06
Sample Rate: 0.10
Average: 51.33



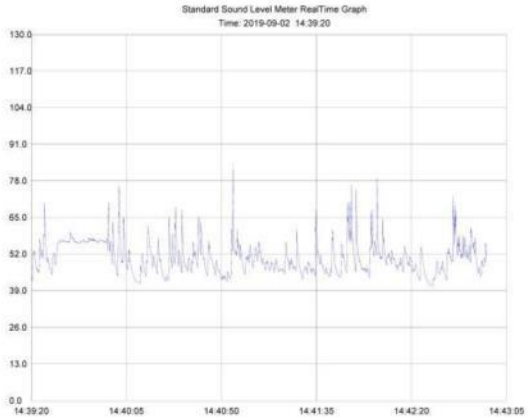
Start Time: 12-05-2018,18:28:34
Maxnum: 69.20 12-05-2018,18:31:43
Minnum: 42.10 12-05-2018,18:31:24
Sample Rate: 0.10
Average: 48.20

Test results for Shota Rustaveli University:

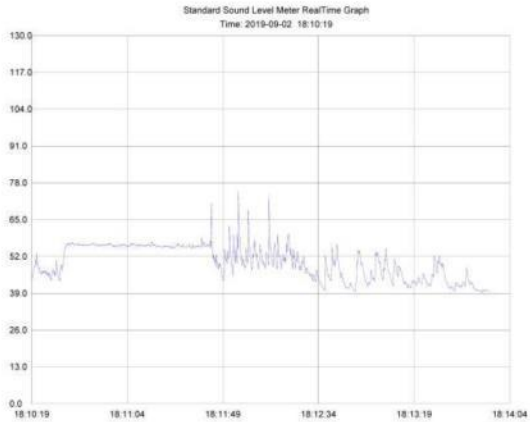
Day 1 (02.09.2019):



Start Time: 02-09-2019,09:43:42
Maxnum: 85.10 02-09-2019,09:46:56
Minnum: 41.20 02-09-2019,09:44:04
Sample Rate: 0.10
Average: 48.79

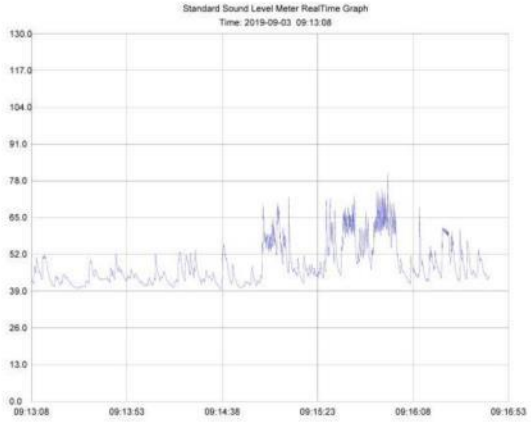


Start Time: 02-09-2019,14:39:20
Maxnum: 83.80 02-09-2019,14:40:57
Minnum: 40.60 02-09-2019,14:42:30
Sample Rate: 0.10
Average: 50.67

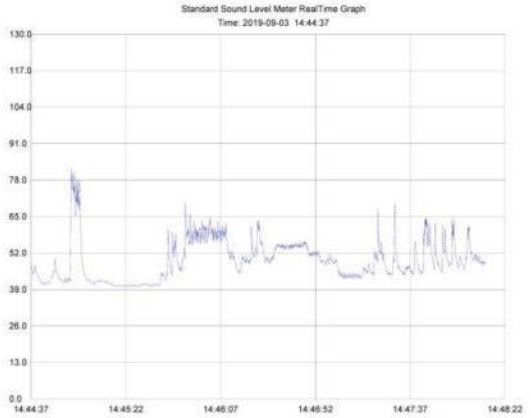


Start Time: 02-09-2019,18:10:19
Maxnum: 74.90 02-09-2019,18:11:58
Minnum: 39.30 02-09-2019,18:13:51
Sample Rate: 0.10
Average: 49.90

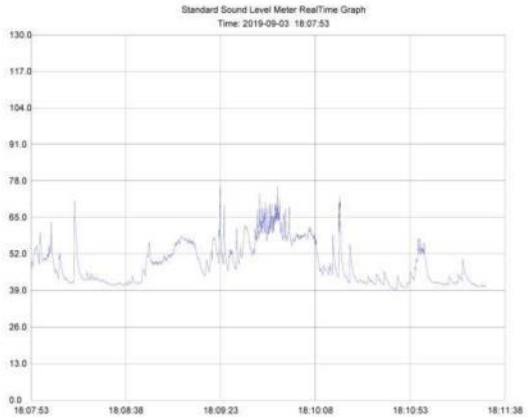
Day 2 (03.09.2019)



Start Time: 03-09-2019,09:13:08
Maxnum: 80.40 03-09-2019,09:15:57
Minnum: 39.70 03-09-2019,09:14:37
Sample Rate: 0.10
Average: 48.18

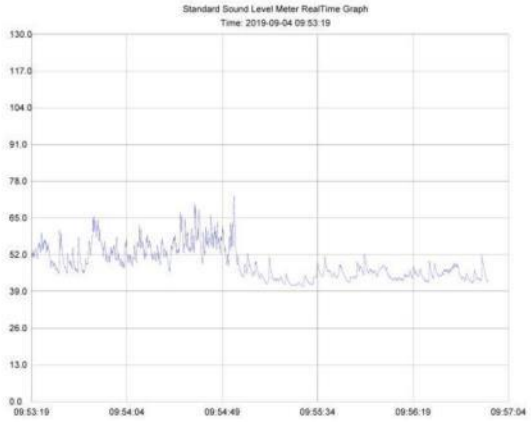


Start Time: 03-09-2019,14:44:37
Maxnum: 82.00 03-09-2019,14:44:57
Minnum: 39.90 03-09-2019,14:45:30
Sample Rate: 0.10
Average: 49.23

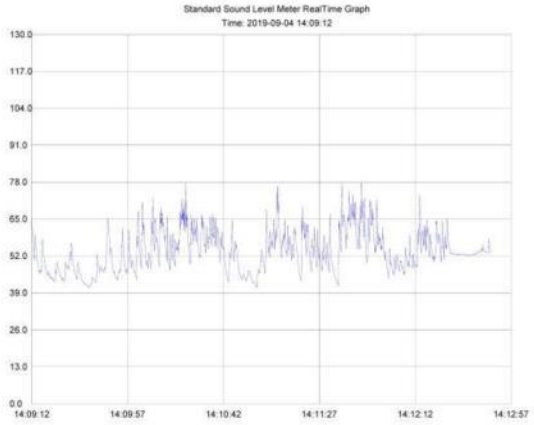


Start Time: 03-09-2019,18:07:53
Maxnum: 76.70 03-09-2019,18:09:23
Minnum: 39.20 03-09-2019,18:10:45
Sample Rate: 0.10
Average: 48.57

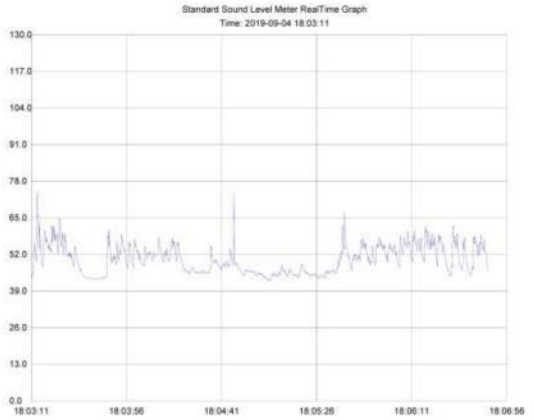
Day 3 (04.09.2019):



Start Time: 04-09-2019,09:53:19
Maxnum: 72.80 04-09-2019,09:54:57
Minnum: 40.90 04-09-2019,09:55:26
Sample Rate: 0.10
Average: 48.97

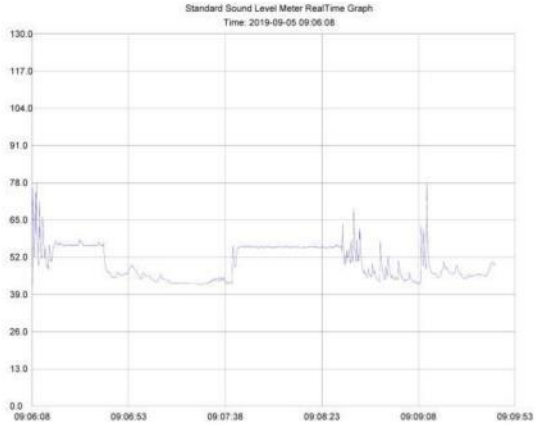


Start Time: 04-09-2019,14:09:12
Maxnum: 77.70 04-09-2019,14:11:45
Minnum: 40.90 04-09-2019,14:09:36
Sample Rate: 0.10
Average: 53.51

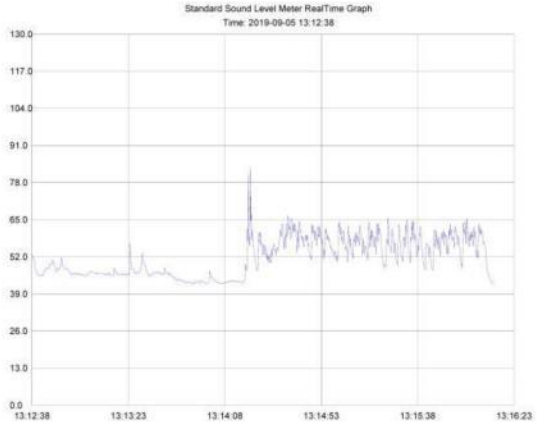


Start Time: 04-09-2019,18:03:11
Maxnum: 74.30 04-09-2019,18:03:15
Minnum: 42.70 04-09-2019,18:05:03
Sample Rate: 0.10
Average: 50.17

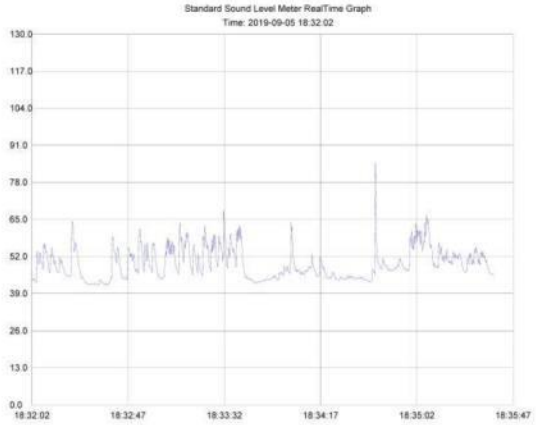
Day 4 (05.09.2019):



Start Time: 05-09-2019,09:06:08
Maxnum: 78.00 05-09-2019,09:06:11
Minnum: 42.30 05-09-2019,09:07:26
Sample Rate: 0.10
Average: 49.95

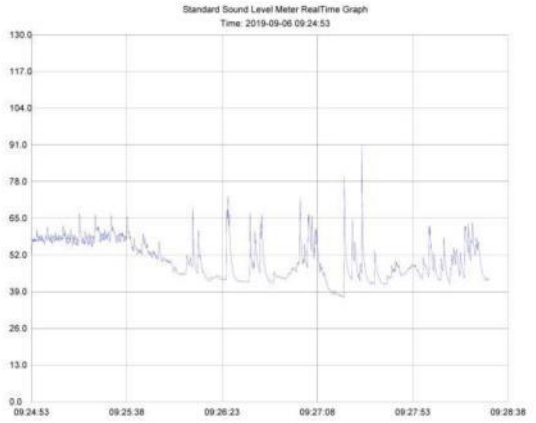


Start Time: 04-09-2019,13:12:38
Maxnum: 84.10 04-09-2019,13:14:24
Minnum: 42.60 04-09-2019,13:14:07
Sample Rate: 0.10
Average: 51.71

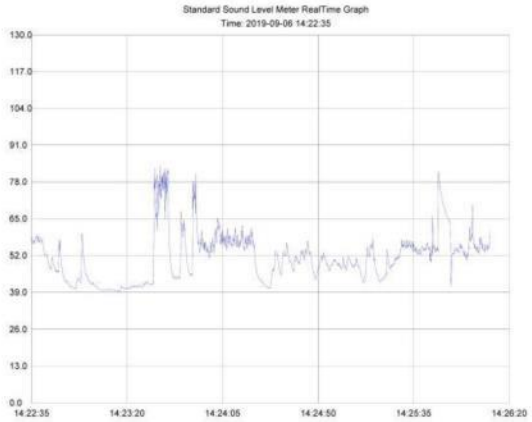


Start Time: 05-09-2019,18:32:02
Maxnum: 84.90 05-09-2019,18:34:31
Minnum: 41.90 05-09-2019,18:32:33
Sample Rate: 0.10
Average: 49.41

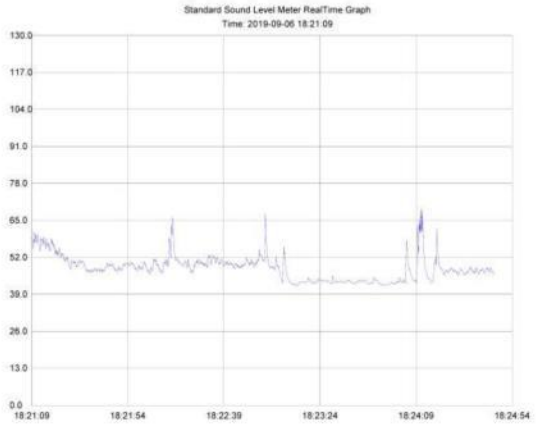
Day 5 (06.09.2019):



Start Time: 06-09-2019,09:24:53
Maxnum: 90.70 06-09-2019,09:27:29
Minnum: 36.80 06-09-2019,09:27:20
Sample Rate: 0.10
Average: 50.37



Start Time: 06-09-2019,14:22:35
Maxnum: 83.70 06-09-2019,14:23:38
Minnum: 39.40 06-09-2019,14:23:17
Sample Rate: 0.10
Average: 51.33

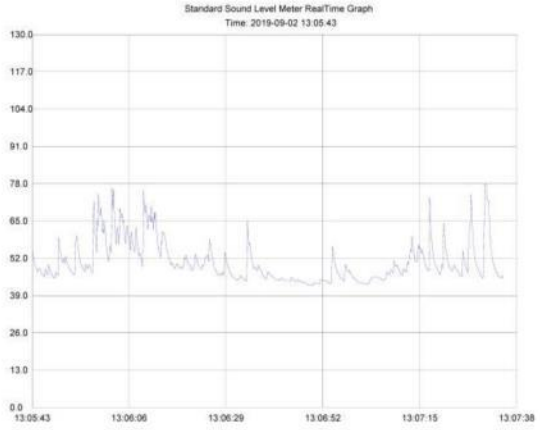


Start Time: 06-09-2019,18:21:09
Maxnum: 69.20 06-09-2019,18:24:14
Minnum: 42.10 06-09-2019,18:23:12
Sample Rate: 0.10
Average: 48.20

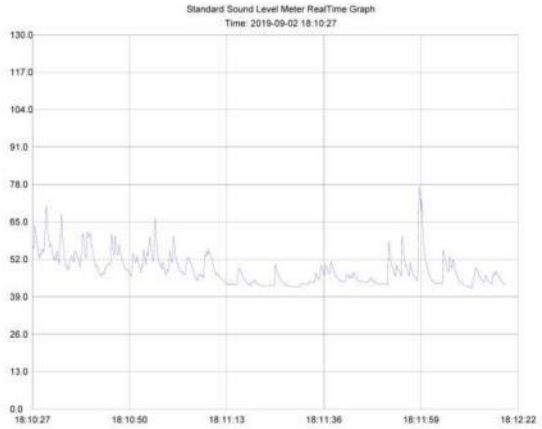
Test results for The Magnolia Hotel:

Day 1 (02.09.2019):

Start Time: 02-09-2019,09:13:50
Maxnum: 87.40 02-09-2019,09:15:19
Minnum: 37.10 02-09-2019,09:15:18
Sample Rate: 0.10
Average: 49.80

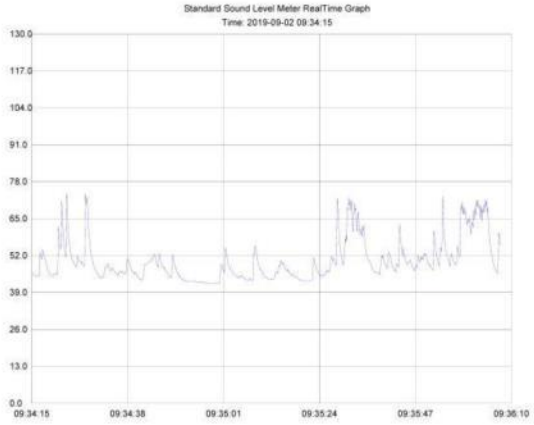


Start Time: 02-09-2019,13:05:43
Maxnum: 78.00 02-09-2019,13:07:28
Minnum: 42.50 02-09-2019,13:06:49
Sample Rate: 0.10
Average: 50.65

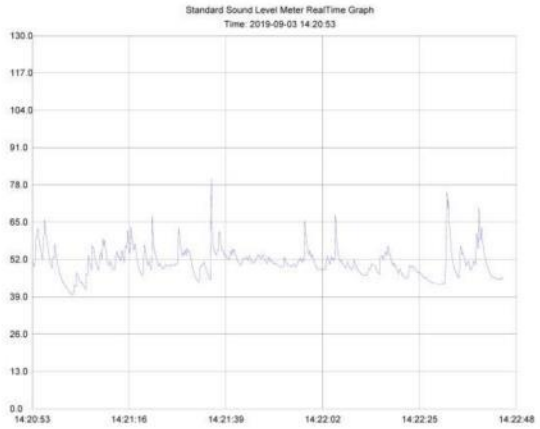


Start Time: 02-09-2019,18:10:27
Maxnum: 77.00 02-09-2019,18:11:58
Minnum: 42.10 02-09-2019,18:12:10
Sample Rate: 0.10
Average: 48.57

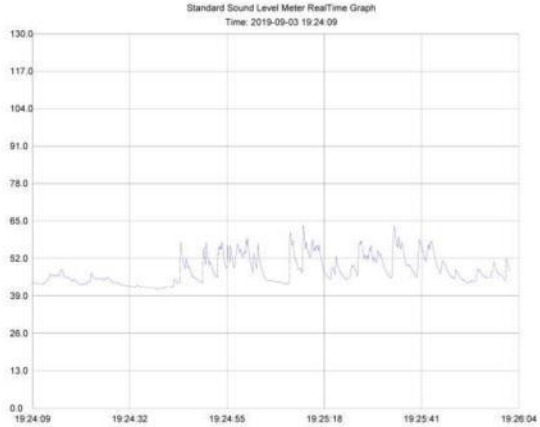
Day 2 (03.09.2019):



Start Time: 03-09-2019,09:34:15
Maxnum: 73.60 03-09-2019,09:34:23
Minnum: 42.10 03-09-2019,09:34:56
Sample Rate: 0.10
Average: 50.14

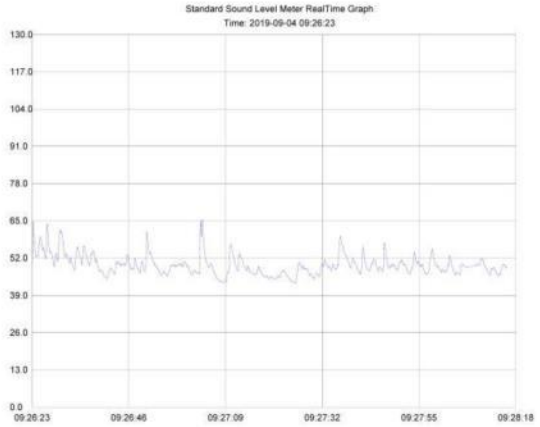


Start Time: 03-09-2019,14:20:53
Maxnum: 80.00 03-09-2019,14:21:35
Minnum: 39.80 03-09-2019,14:21:03
Sample Rate: 0.10
Average: 50.90

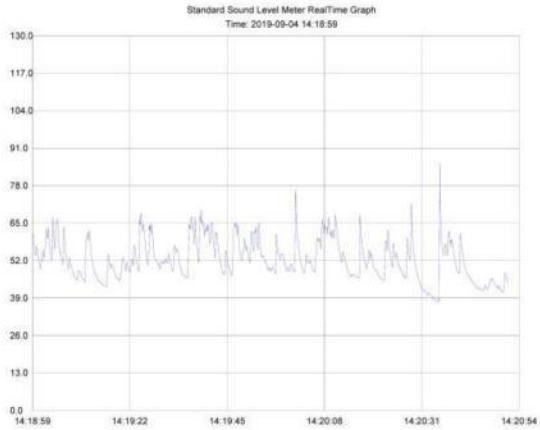


Start Time: 03-09-2019,19:24:09
Maxnum: 63.50 03-09-2019,19:25:12
Minnum: 41.50 03-09-2019,19:24:41
Sample Rate: 0.10
Average: 47.88

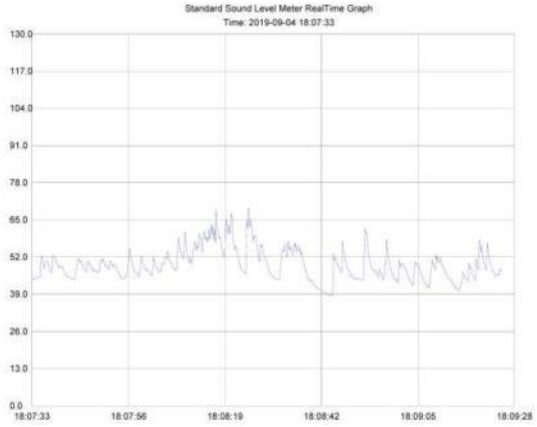
Day 3 (04.09.2019):



Start Time: 04-09-2019,09:26:23
Maxnum: 65.50 04-09-2019,09:27:00
Minnum: 43.40 04-09-2019,09:27:23
Sample Rate: 0.10
Average: 49.52

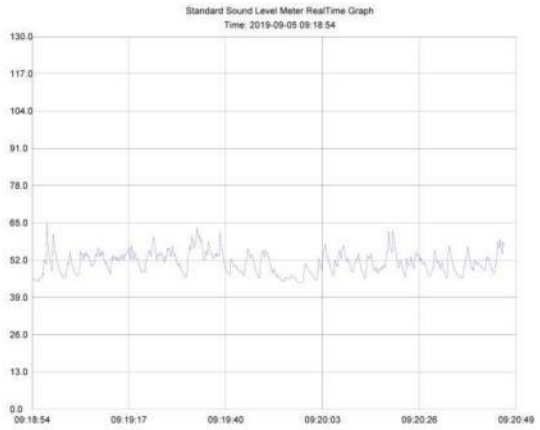


Start Time: 04-09-2019,14:18:59
Maxnum: 85.70 04-09-2019,14:20:36
Minnum: 37.80 04-09-2019,14:20:35
Sample Rate: 0.10
Average: 52.40

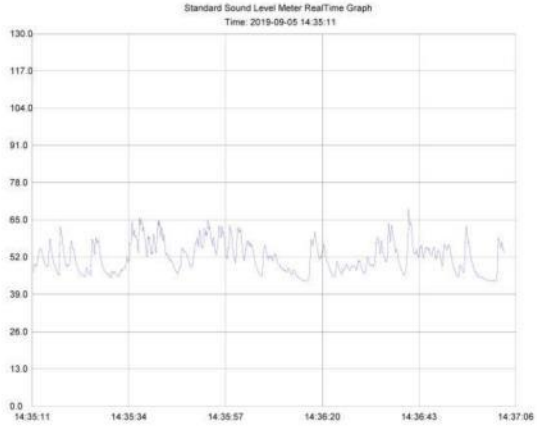


Start Time: 04-09-2019,18:07:33
Maxnum: 69.00 04-09-2019,18:08:16
Minnum: 38.30 04-09-2019,18:08:45
Sample Rate: 0.10
Average: 49.30

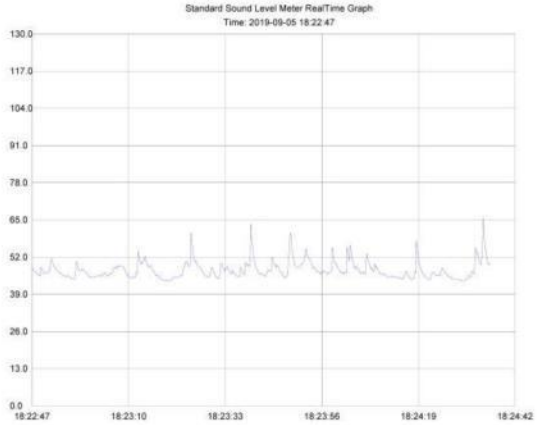
Day 4 (05.09.2019):



Start Time: 05-09-2019,09:18:54
Maxnum: 65.00 05-09-2019,09:18:59
Minnum: 44.00 05-09-2019,09:19:57
Sample Rate: 0.10
Average: 51.17

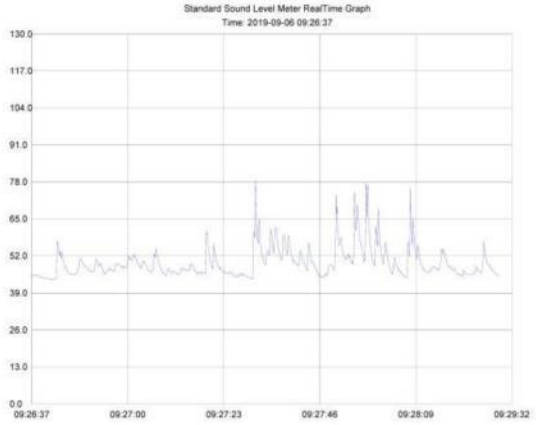


Start Time: 05-09-2019,14:35:11
Maxnum: 68.90 05-09-2019,14:36:40
Minnum: 43.60 05-09-2019,14:36:16
Sample Rate: 0.10
Average: 52.03

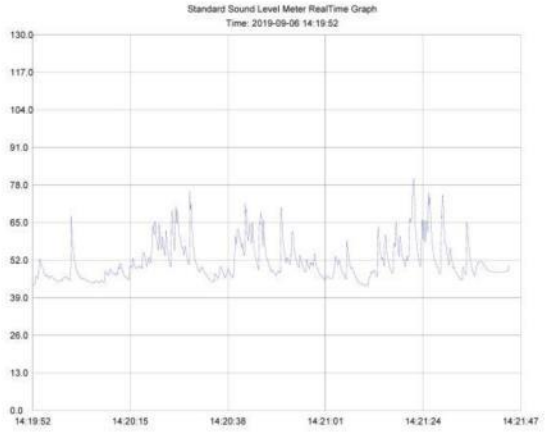


Start Time: 05-09-2019,18:22:47
Maxnum: 65.80 05-09-2019,18:24:33
Minnum: 43.70 05-09-2019,18:23:21
Sample Rate: 0.10
Average: 47.45

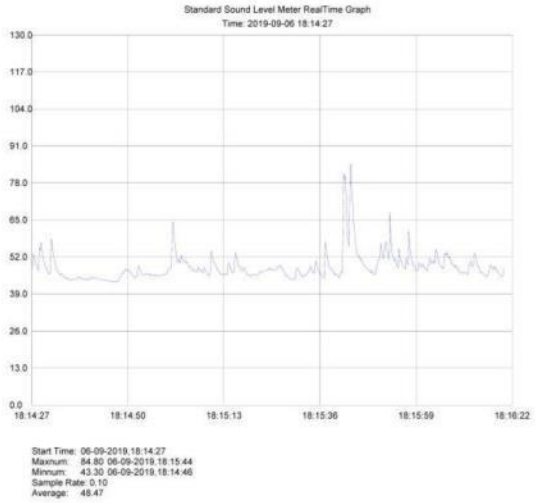
Day 5 (06.09.2019):



Start Time: 06-09-2019,09:26:37
Maxnum: 78.80 06-09-2019,09:27:31
Minnum: 43.90 06-09-2019,09:26:41
Sample Rate: 0.10
Average: 49.62



Start Time: 06-09-2019,14:19:52
Maxnum: 80.10 06-09-2019,14:21:21
Minnum: 43.20 06-09-2019,14:21:12
Sample Rate: 0.10
Average: 51.61



Meteorological Data (02.09.2019 - 06.09.2019) Batumi, Georgia

Weather History & Observations

2019	Temp. (°C)			Dew Point (°C)			Humidity (%)			Pressure (hPa)		Wind (km/h)			Precip. (mm)
Aug	high	avg	low	high	avg	low	high	avg	low	high	low	high	avg	low	sum
02	25	22.4	21	21.3	20.2	18.3	95	88	72	1,015.58	1,012.19	24.1	4.6	0.0	5.59
03	26.5	23.6	20.2	21.8	19.5	17.2	94	78	63	1,015.58	1,014.22	35.6	11.2	0.0	0.00
04	26.6	23.4	19.4	21.3	19.4	16.7	92	78	65	1,014.56	1,011.85	30.6	7.3	0.0	0.00
05	26.4	23.9	21.1	21.5	20.2	18.0	92	80	68	1,014.56	1,011.51	23.8	7.5	0.0	0.00
06	26.4	23.3	19.9	21.7	20.3	18.6	95	84	72	1,015.92	1,013.55	23.8	6.5	0.0	6.10

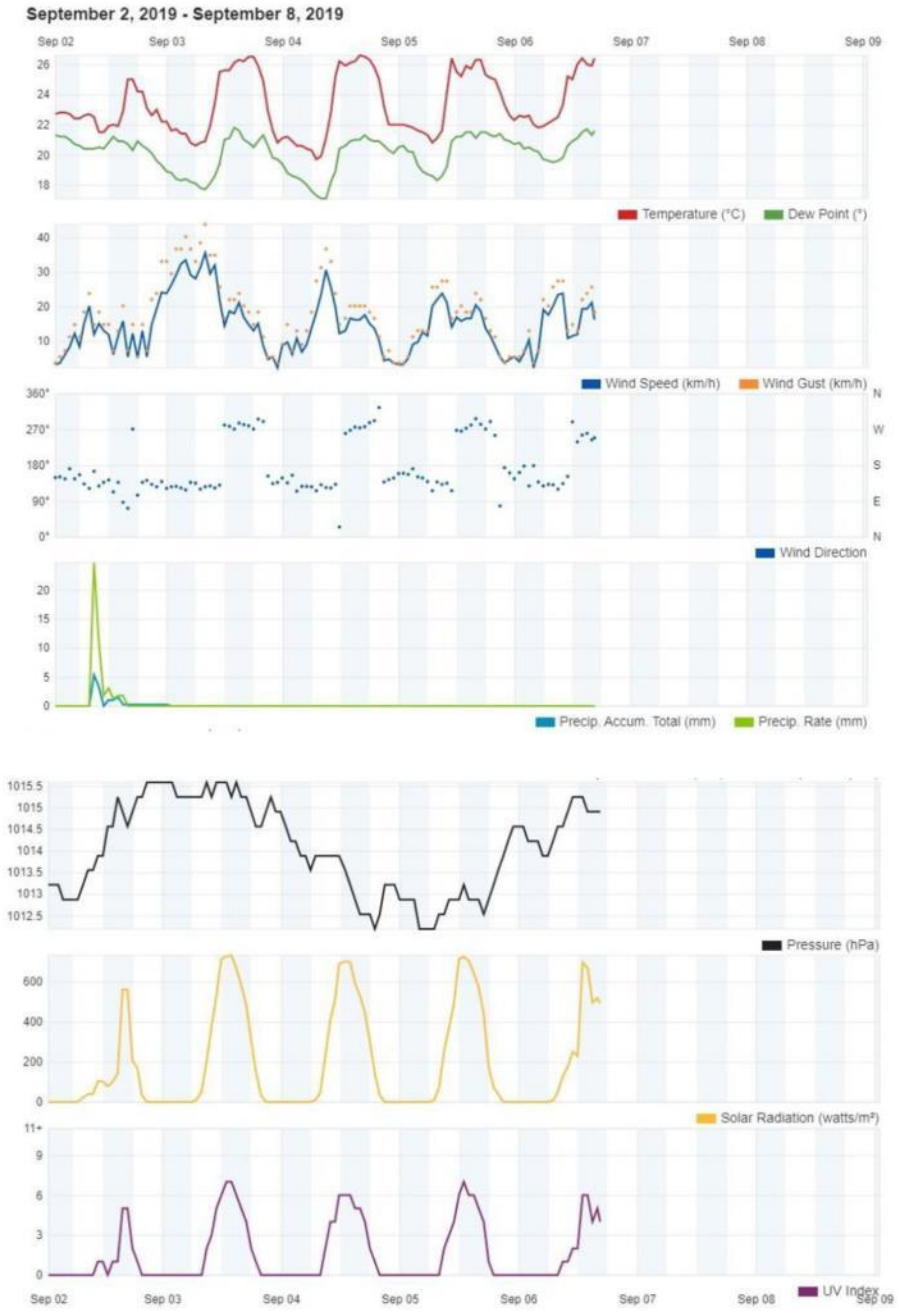

September 2, 2019 - September 8, 2019
Sep 02
Sep 03
Sep 04
Sep 05
Sep 06
Sep 07
Sep 08
Sep 09
Temperature (°C)
Dew Point (°)
Wind Speed (km/h)
Wind Gust (km/h)
Wind Direction
Precip. Accum. Total (mm)
Precip. Rate (mm)
Pressure (hPa)
Solar Radiation (watts/m²)
UV Index

Photo-Documentation:




Conclusion:

"Based on the results of the tests conducted in three locations (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), Monitoring noise levels are under the norm of Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments".

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
Shota Rustaveli University	Day 1 12.08.2019	Morning	09:16	**48.79**	**49.73**	**50**
		Noon	14:43	**50.67**		
		Evening	18:38	**49.90**	**49.90**	**45**
	Day 2 13.08.2019	Morning	09:32	**48.18**	**48.70**	**50**
		Noon	14:44	**49.23**		
		Evening	18:33	**48.57**	**48.57**	**45**
	Day 3 14.08.2019	Morning	09:42	**48.97**	**51.24**	**50**
		Noon	14:09	**53.51**		
		Evening	18:28	**50.17**	**50.17**	**45**
	Day 4 15.08.2019	Morning	09:48	**49.95**	**50.83**	**50**
		Noon	13:14	**51.71**		
		Evening	18:08	**49.41**	**49.41**	**45**
	Day 5 16.08.2019	Morning	09:17	**50.37**	**50.85**	**50**
		Noon	14:48	**51.33**		
		Evening	18:28	**48.20**	**48.20**	**45**

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
The Magnolia Hotel	Day 1 12.08.2019	Morning	09:43	**48.79**	**49.73**	**50**
		Noon	14:39	**50.67**		
		Evening	18:10	**49.90**	**49.90**	**45**
	Day 2 13.08.2019	Morning	09:13	**48.18**	**48.70**	**50**
		Noon	14:44	**49.23**		
		Evening	18:07	**48.57**	**48.57**	**45**
	Day 3 14.08.2019	Morning	09:53	**48.97**	**51.24**	**50**
		Noon	14:09	**53.51**		
		Evening	18:03	**50.17**	**50.17**	**45**
	Day 4 15.08.2019	Morning	09:06	**49.95**	**50.83**	**50**
		Noon	13:12	**51.71**		
		Evening	18:32	**49.41**	**49.41**	**45**
	Day 5 16.08.2019	Morning	09:24	**50.37**	**50.85**	**50**
		Noon	14:22	**51.33**		
		Evening	18:21	**48.20**	**48.20**	**45**

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
School-lyceum "Taoba"	Day 1 12.08.2019	Morning	09:13	**49.80**	**50.22**	**50**
		Noon	13:05	**50.65**		
		Evening	18:10	**48.57**	**48.57**	**45**
	Day 2 13.08.2019	Morning	09:34	**50.14**	**50.52**	**50**
		Noon	14:20	**50.90**		
		Evening	19:24	**47.88**	**47.88**	**45**
	Day 3 14.08.2019	Morning	09:26	**49.52**	**50.96**	**50**
		Noon	14:18	**52.40**		
		Evening	18.07	**49.30**	**49.30**	**45**
	Day 4 15.08.2019	Morning	09:18	**51.17**	**51.60**	**50**
		Noon	14:35	**52.03**		
		Evening	18:22	**47.45**	**47.45**	**45**
	Day 5 16.08.2019	Morning	09:26	**49.62**	**50.61**	**50**
		Noon	14:19	**51.61**		
		Evening	18:14	**48.47**	**48.47**	**45**

8.1.4 October

Report on: Noise Measurement

Monitoring Test

Period of Inspection: 20191007 - 20191011	**Project: Coastal Protection Batumi**	**Locations :**	**1. School-lyceum "Taoba" 2. Shota Rustaveli University 3. The Magnolia Hotel**

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted noise measurements in order to identify and quantify noise level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - noise Levels; the samples have been taken at three location (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), three times a day (morning, afternoon and evening) during five days, during 30 to 46 seconds for each taken sample.

Device Name: **Sound Level Meter PCE-322A**

Noise Standards: Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments"

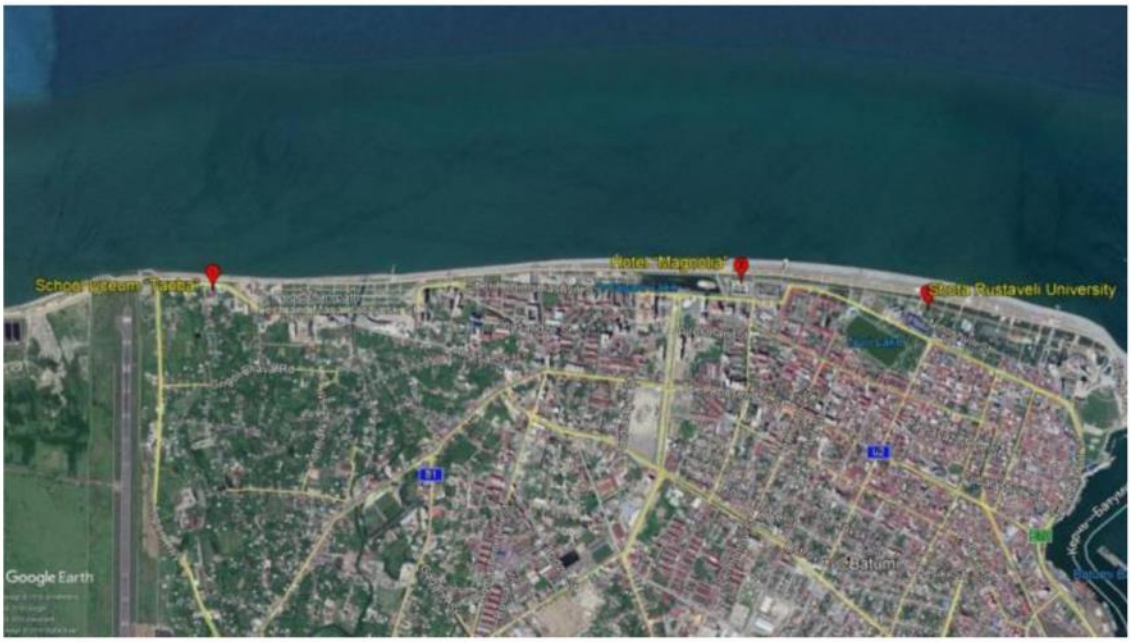
Permissible norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments

N	The applied functions of the spaces and areas	Admissible norms		
		L day (DBA)		
		Day	Evening	L night (DBA)
1	Studying establishments and reading rooms	35	35	35
2	The treatment cabinets of the medical establishments	40	40	40
3	Residential and sleeping areas	35	30	30
4	The treatment and rehabilitation rooms of the inpatient medical establishments	35	30	30
5	The rooms of the hotel/guest houses/motels	40	35	35
6	Trading halls and guest rooms	55	55	55
7	Restaurants, bars, cafes	50	50	50
8	Spectator/listeners' hall	30	30	30
9	Sport halls and pools	55	55	55
10	Small offices (≤100 m^3), working premises and premises	40	40	40

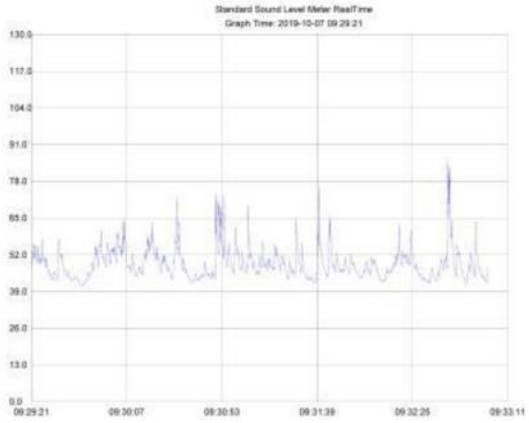
	without office technique			
11	Large offices (≥100 m³), working premises and premised with office technique	45	45	45
12	Conversation premises	35	35	35
13	Territories, distanced from the low multistoried residential houses (number of the floors >6), medical establishments, children and social service objects	50	45	40
14	Territories, distanced from the multistoried residential houses (number of the floors >6), cultural, educational, administrative and scientific establishments	55	50	45
15	Territories, distanced from the hotels, trading, service, sport and social organizations	60	55	50

Note: The threshold #13 and highlighted in the table (yellow) is thresholds, which are considered.

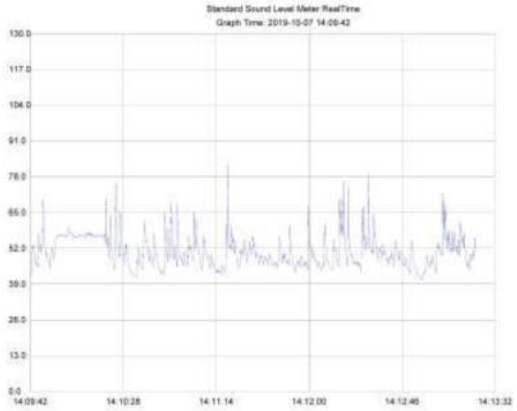
Map with samples points:



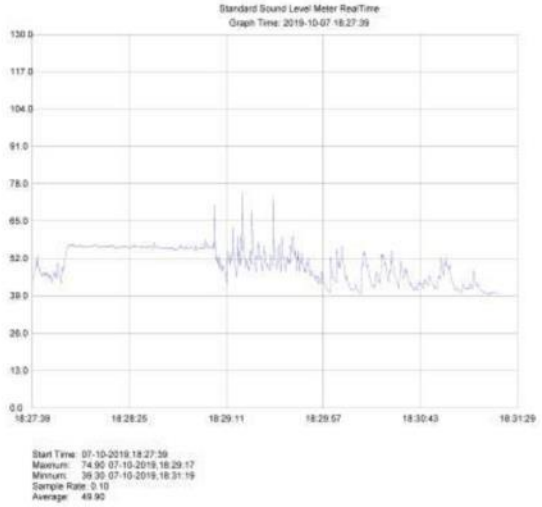
Test results for School-lyceum "Taoba":
Day 1 (07.10.2019):



Start Time: 07-10-2019,09:29:21
Maxnum: 85.10 07-10-2019,09:32:41
Minnum: 41.20 07-10-2019,09:30:52
Sample Rate: 0.10
Average: 49.79

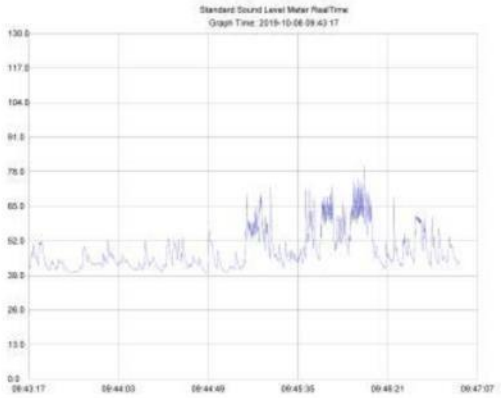


Start Time: 07-10-2019,14:09:42
Maxnum: 83.80 07-10-2019,14:11:18
Minnum: 40.60 07-10-2019,14:12:52
Sample Rate: 0.10
Average: 50.67

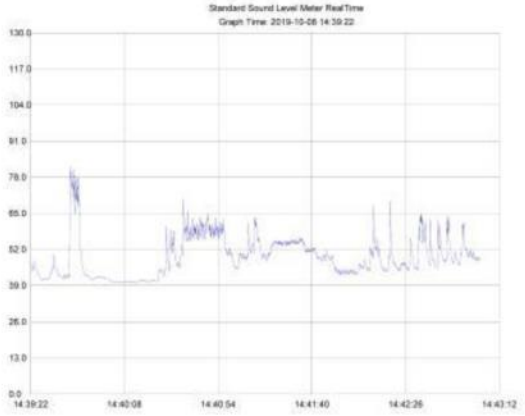


Start Time: 07-10-2019,18:27:39
Maximum: 74.90 07-10-2019,18:29:17
Minimum: 39.30 07-10-2019,18:31:19
Sample Rate: 0.10
Average: 49.90

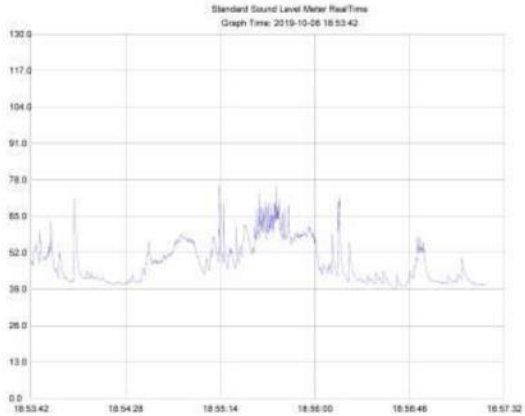
Day 2 (08.10.2019):



Start Time: 08-10-2019,09:43:17
Maximum: 80.40 08-10-2019,09:46:10
Minimum: 39.70 08-10-2019,09:44:49
Sample Rate: 0.10
Average: 48.18

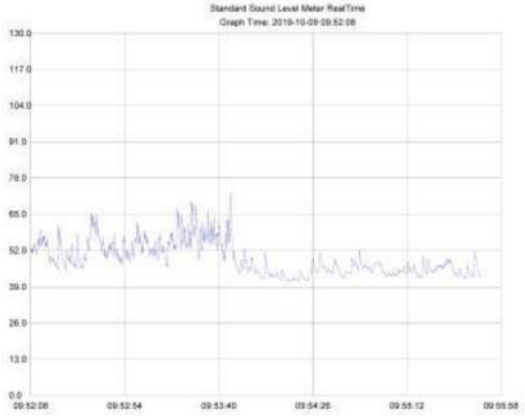


Start Time: 08-10-2019,14:39:22
Maximum: 82.00 08-10-2019,14:39:34
Minimum: 39.90 08-10-2019,14:40:15
Sample Rate: 0.10
Average: 49.23



Start Time: 08-10-2019,18:53:42
Maximum: 76.70 08-10-2019,18:55:14
Minimum: 39.20 08-10-2019,18:56:49
Sample Rate: 0.10
Average: 48.57

Day 3 (09.10.2019):

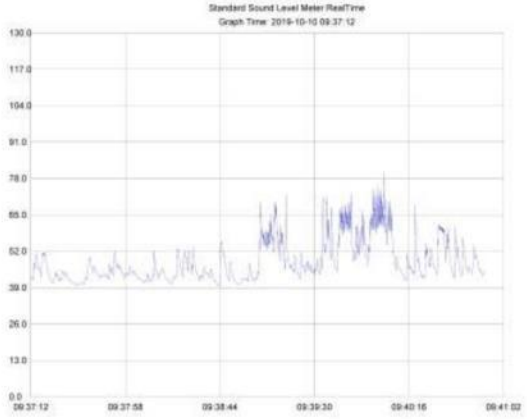


Start Time: 09-10-2019 09:52:08
Maximum: 72.80 09-10-2019 09:53:46
Minimum: 40.90 09-10-2019 09:54:20
Sample Rate: 0.10
Average: 48.97

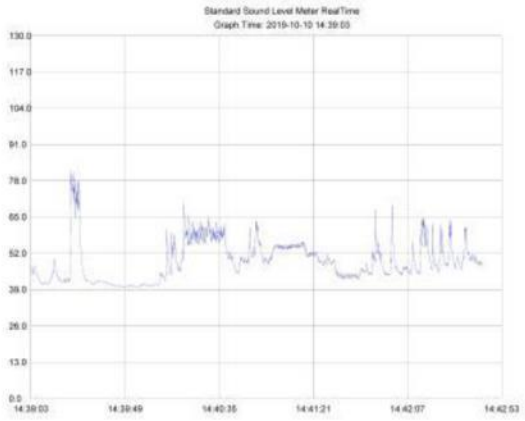
Start Time: 09-10-2019 14:57:09
Maximum: 77.70 09-10-2019 14:58:21
Minimum: 40.90 09-10-2019 14:57:34
Sample Rate: 0.10
Average: 53.51

Start Time: 09-10-2019,18:24:31
Maximum: 74.30 09-10-2019,18:24:35
Minimum: 42.70 09-10-2019,18:26:34
Sample Rate: 0.10
Average: 50.17

Day 4 (10.10.2019):



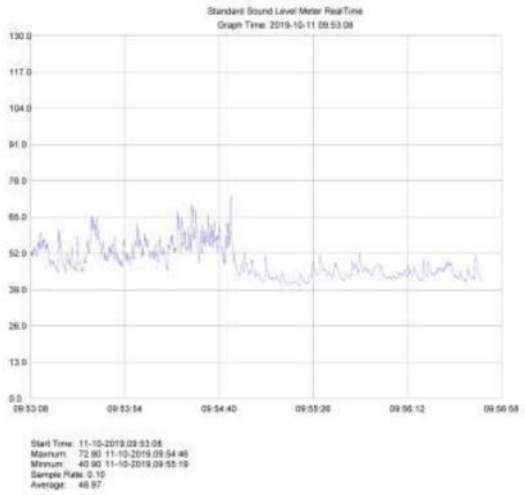
Start Time: 10-10-2019,09:37:12
Maximum: 80.40 10-10-2019,09:40:05
Minimum: 39.70 10-10-2019,09:39:44
Sample Rate: 0.10
Average: 48.18



Start Time: 10-10-2019,14:39:03
Maximum: 82.00 10-10-2019,14:39:25
Minimum: 39.90 10-10-2019,14:39:54
Sample Rate: 0.10
Average: 49.23

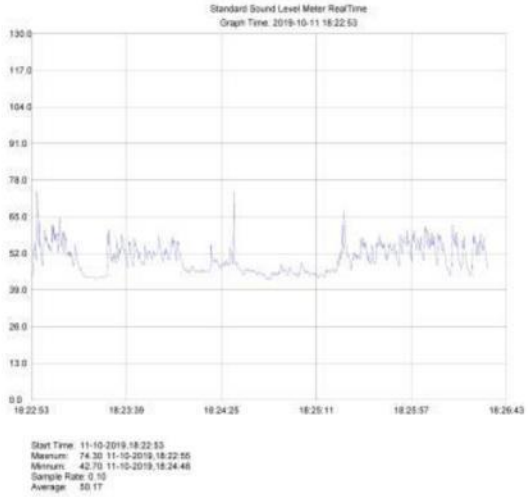
Start Time: 10-10-2019,18:09:25
Maximum: 76.70 10-10-2019,18:10:57
Minimum: 39.20 10-10-2019,18:12:22
Sample Rate: 0.10
Average: 48.57

Day 5 (11.10.2019):



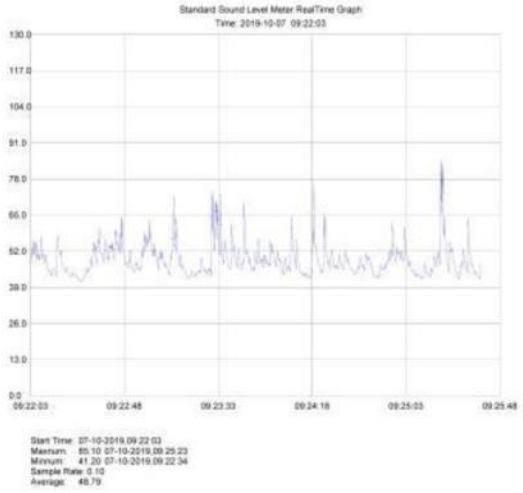
Start Time: 11-10-2019,09:53:08
Maximum: 72.80 11-10-2019,09:54:46
Minimum: 40.90 11-10-2019,09:55:19
Sample Rate: 0.10
Average: 48.97

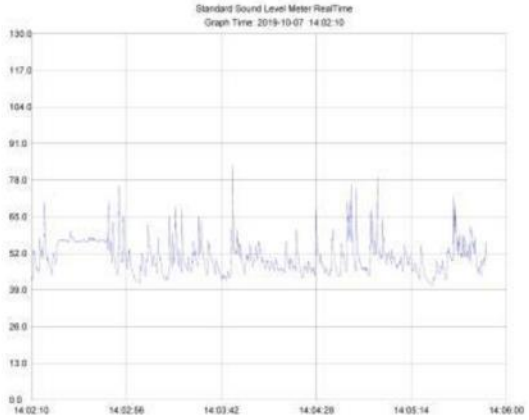
Start Time: 11-10-2019,14:46:33
Maximum: 77.70 11-10-2019,14:47:44
Minimum: 40.90 11-10-2019,14:46:58
Sample Rate: 0.10
Average: 53.51



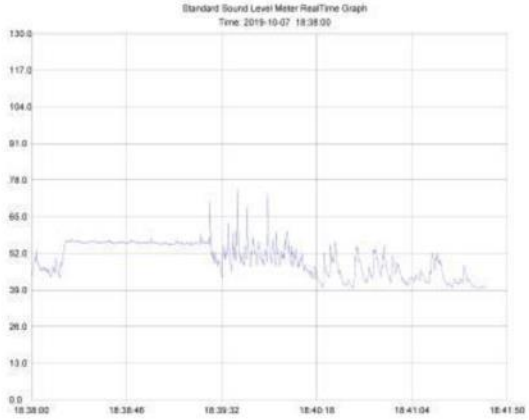
Test results for Shota Rustaveli University:

Day 1 (07.10.2019):



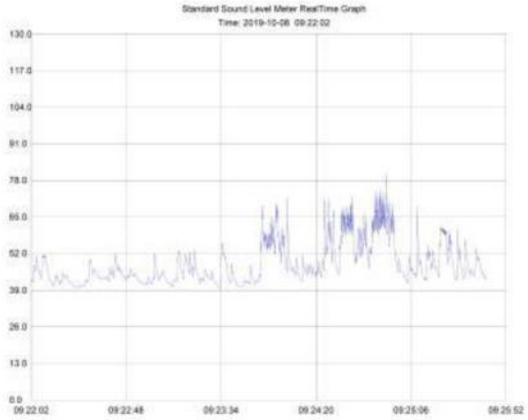


Start Time: 07-10-2019,14:02:10
Maxnum: 83.80 07-10-2019,14:03:49
Minnum: 40.80 07-10-2019,14:05:32
Sample Rate: 0.10
Average: 59.67

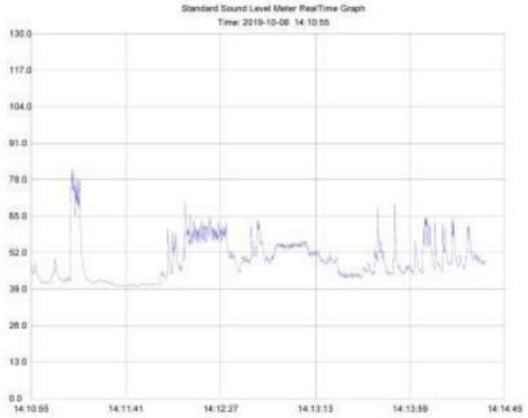


Start Time: 07-10-2019,18:38:00
Maxnum: 74.90 07-10-2019,18:39:46
Minnum: 39.30 07-10-2019,18:41:34
Sample Rate: 0.10
Average: 49.90

Day 2 (08.10.2019)



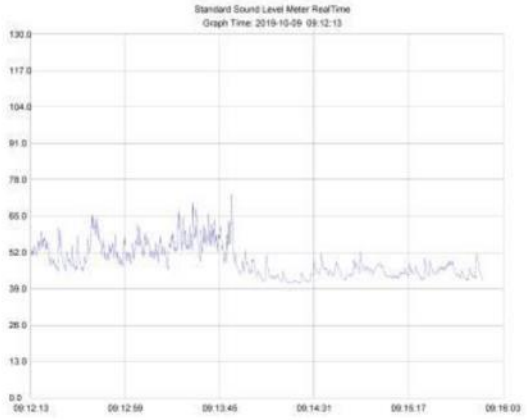
Start Time: 08-10-2019,09:22:02
Maximum: 80.40 08-10-2019,09:24:58
Minimum: 39.70 08-10-2019,09:23:32
Sample Rate: 0.10
Average: 48.16



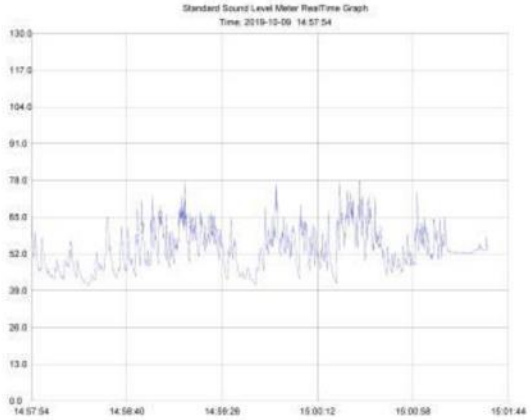
Start Time: 08-10-2019,14:10:55
Maximum: 82.00 08-10-2019,14:11:28
Minimum: 39.90 08-10-2019,14:11:44
Sample Rate: 0.10
Average: 49.23

Start Time: 08-10-2019,18:52:04
Maxmum: 76.70 08-10-2019,18:53:36
Minmum: 39.20 08-10-2019,18:54:55
Sample Rate: 0.10
Average: 48.57

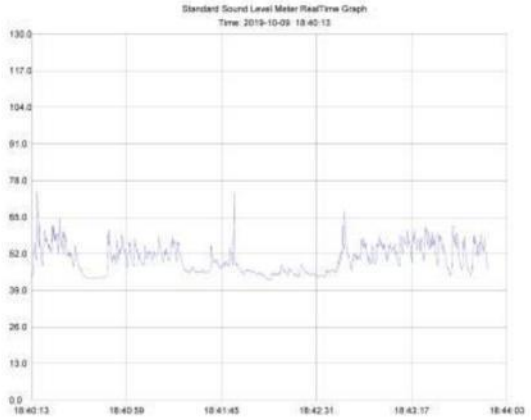
Day 3 (09.10.2019):



Start Time: 09-10-2019,09:12:13
Maxmum: 72.80 09-10-2019,09:13:50
Minmum: 40.90 09-10-2019,09:14:24
Sample Rate: 0.10
Average: 48.97



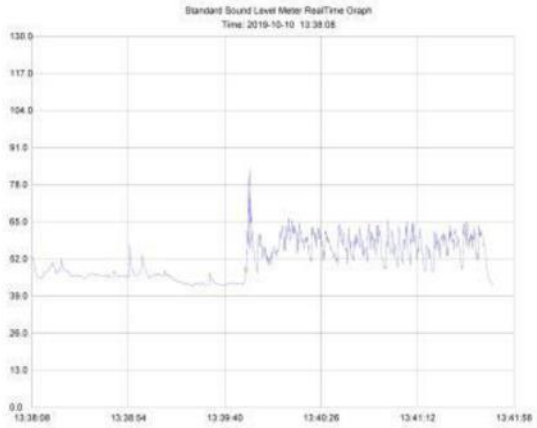
Start Time: 09-10-2019,14:57:54
Maximum: 77.70 09-10-2019,14:59:07
Minimum: 40.90 09-10-2019,14:58:26
Sample Rate: 0.10
Average: 53.51



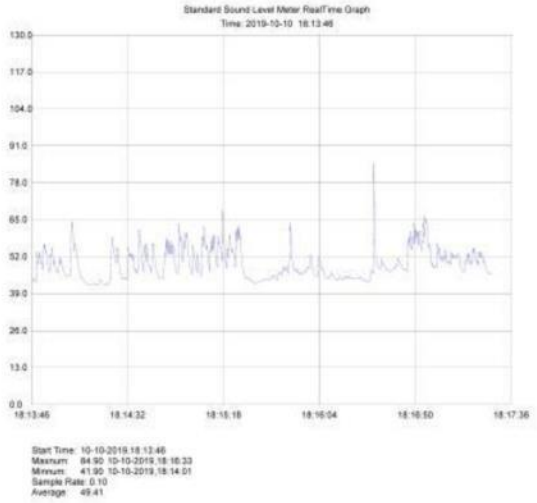
Start Time: 09-10-2019,18:40:13
Maximum: 74.30 09-10-2019,18:40:16
Minimum: 42.70 09-10-2019,18:41:59
Sample Rate: 0.10
Average: 50.17

Day 4 (10.10.2019):

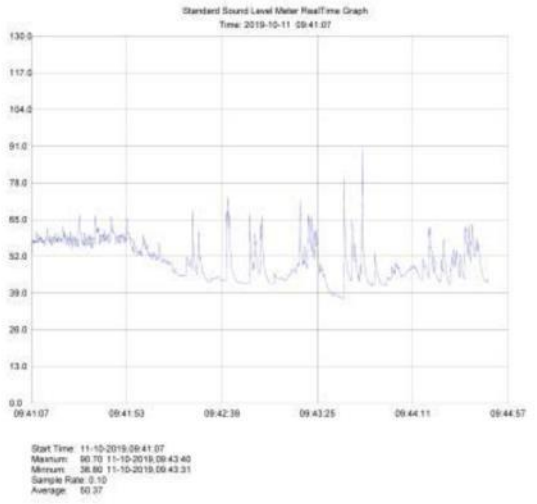
Start Time: 10-10-2019,09:41:34
Maximum: 78.00 10-10-2019,09:41:38
Minimum: 42.30 10-10-2019,09:42:53
Sample Rate: 0.10
Average: 49.95

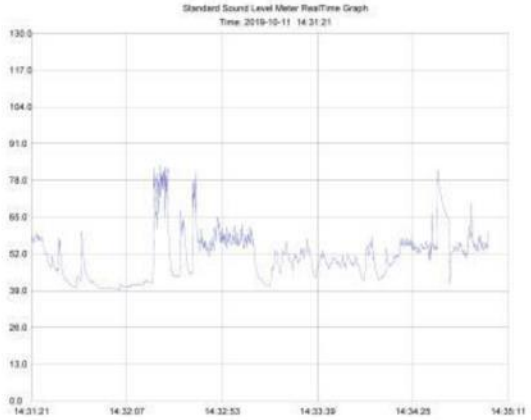


Start Time: 10-10-2019,13:38:08
Maximum: 84.10 10-10-2019,13:39:55
Minimum: 42.60 10-10-2019,13:39:32
Sample Rate: 0.10
Average: 51.71

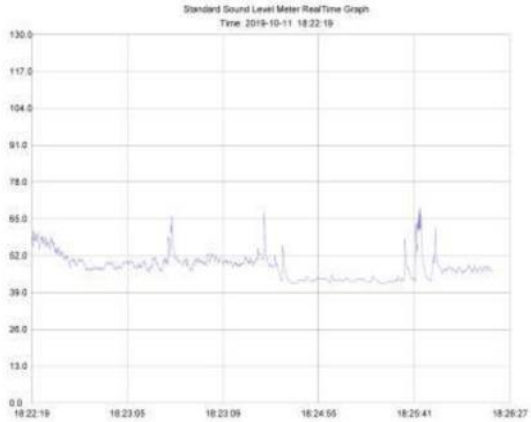


Day 5 (11.10.2019):





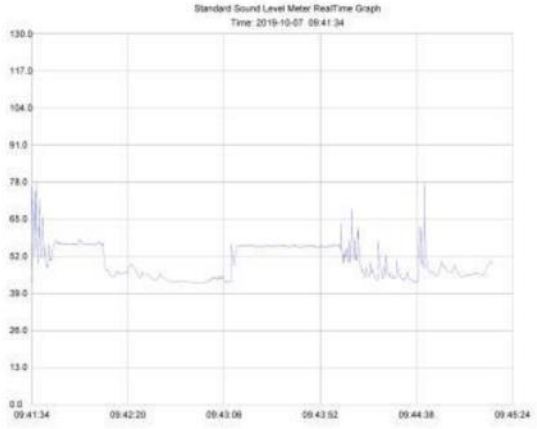
Start Time: 11-10-2019,14:31:21
Maximum: 83.70 11-10-2019,14:32:19
Minimum: 38.40 11-10-2019,14:32:00
Sample Rate: 0.10
Average: 51.33



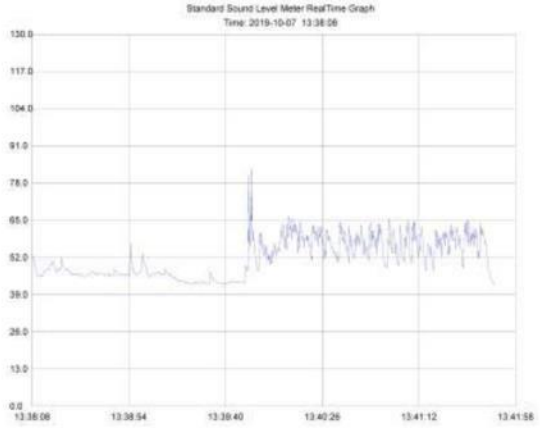
Start Time: 11-10-2019,18:22:19
Maximum: 69.20 11-10-2019,18:25:45
Minimum: 42.10 11-10-2019,18:25:30
Sample Rate: 0.10
Average: 48.20

Test results for The Magnolia Hotel:

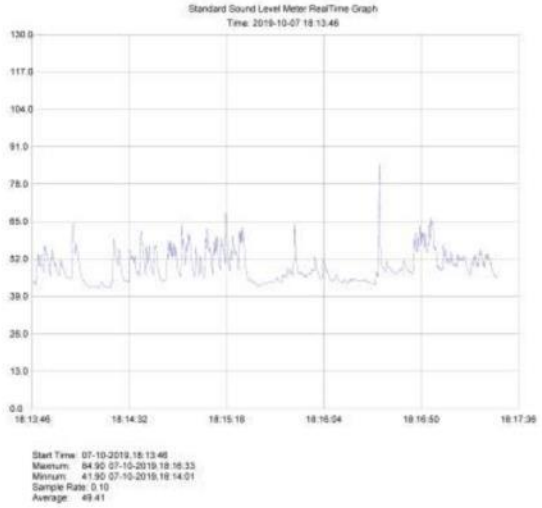
Day 1 (07.10.2019):



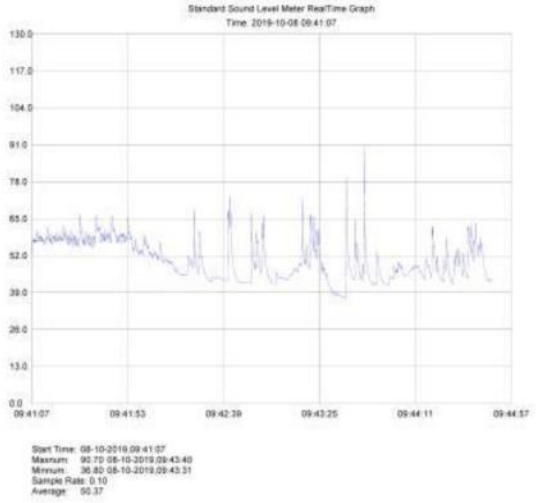
Start Time: 07-10-2019,09:41:34
Maximum: 78.00 07-10-2019,09:41:38
Minimum: 42.30 07-10-2019,09:42:53
Sample Rate: 0.10
Average: 49.95

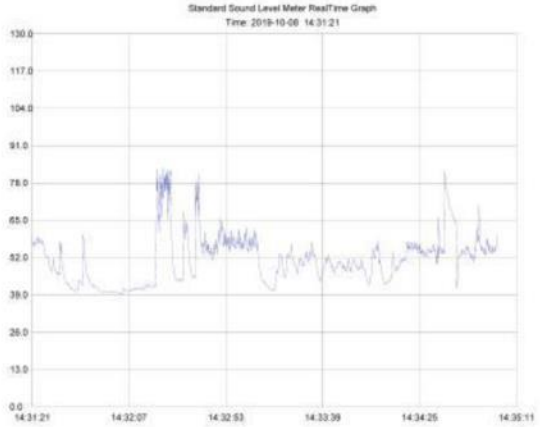


Start Time: 07-10-2019,13:38:08
Maximum: 84.10 07-10-2019,13:39:55
Minimum: 42.60 07-10-2019,13:39:32
Sample Rate: 0.10
Average: 51.71



Day 2 (08.10.2019):

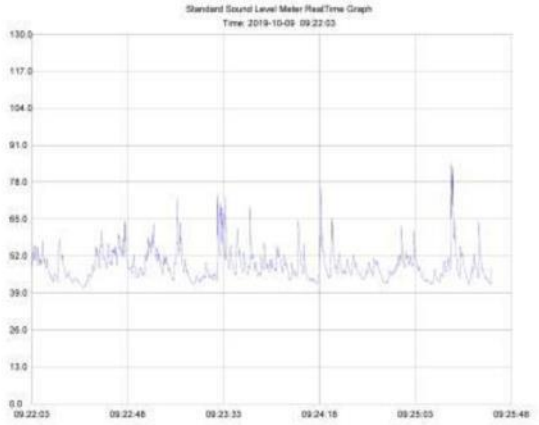




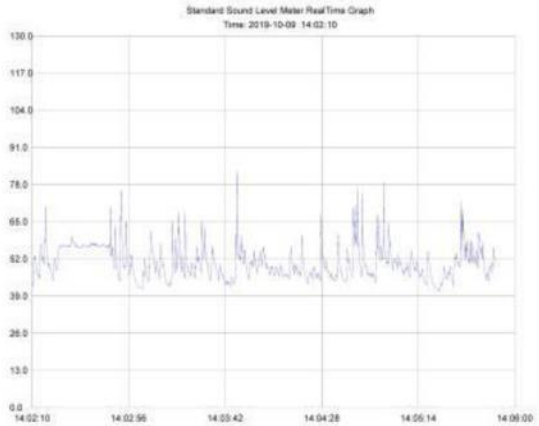
Start Time: 08-10-2019,14:31:21
Maximum: 83.70 08-10-2019,14:32:19
Minimum: 39.40 08-10-2019,14:32:00
Sample Rate: 0.10
Average: 51.33

Start Time: 08-10-2019,18:22:19
Maximum: 69.20 08-10-2019,18:25:45
Minimum: 42.10 08-10-2019,18:25:30
Sample Rate: 0.10
Average: 48.20

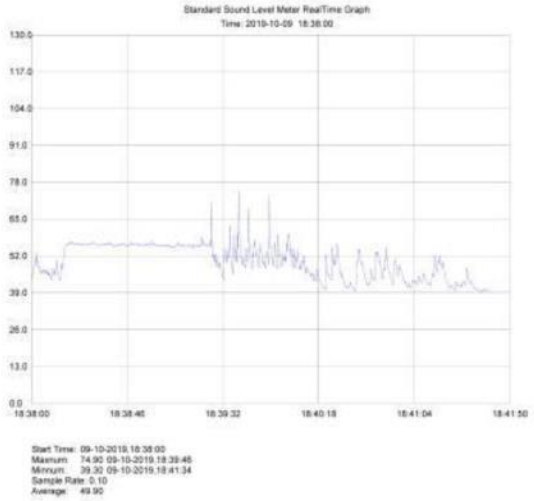
Day 3 (09.10.2019):



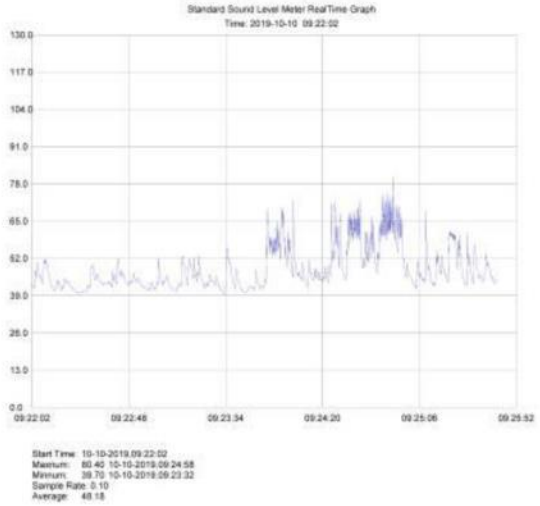
Start Time: 09-10-2019,09:22:03
Maximum: 85.10 09-10-2019,09:25:23
Minimum: 41.20 09-10-2019,09:22:34
Sample Rate: 0.10
Average: 48.79

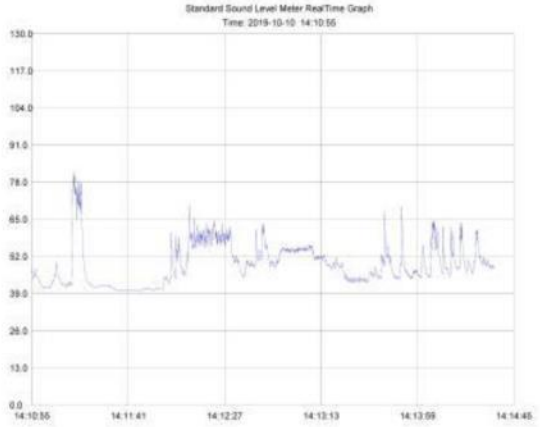


Start Time: 09-10-2019,14:02:10
Maximum: 83.80 09-10-2019,14:03:49
Minimum: 40.60 09-10-2019,14:05:32
Sample Rate: 0.10
Average: 50.87

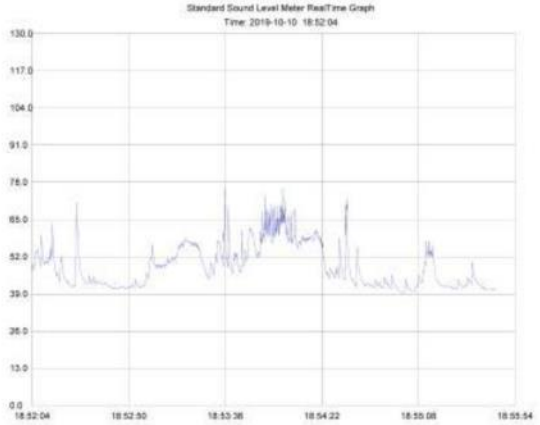


Day 4 (10.10.2019):



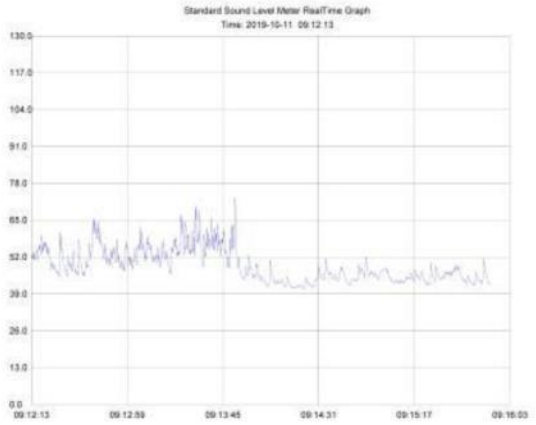


Start Time: 10-10-2019,14:10:55
Maximum: 82.00 10-10-2019,14:11:28
Minimum: 39.90 10-10-2019,14:11:44
Sample Rate: 0.10
Average: 49.23

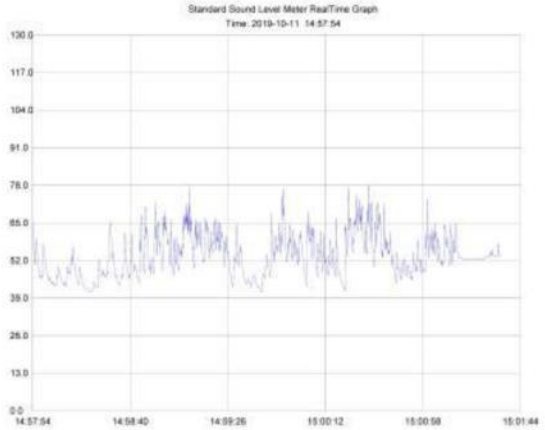


Start Time: 10-10-2019,18:52:04
Maximum: 76.70 10-10-2019,18:53:36
Minimum: 39.20 10-10-2019,18:54:55
Sample Rate: 0.10
Average: 48.57

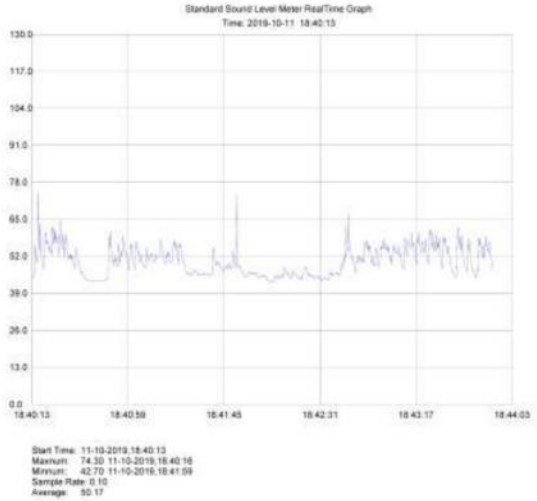
Day 5 (11.10.2019):



Start Time: 11-10-2019,09:12:13
Maxmum: 72.80 11-10-2019,09:13:50
Minmum: 40.90 11-10-2019,09:14:24
Sample Rate: 0.10
Average: 48.97



Start Time: 11-10-2019,14:57:54
Maxmum: 77.70 11-10-2019,14:59:07
Minmum: 40.90 11-10-2019,14:58:26
Sample Rate: 0.10
Average: 53.51



Meteorological Data (07.10.2019 - 11.10.2019) Batumi, Georgia

Weather History & Observations

2019	Temp. (°C)			Dew Point (°C)			Humidity (%)			Pressure (hPa)		Wind (km/h)			Precip. (mm)
Oct	high	avg	low	high	avg	low	high	avg	low	high	low	high	avg	low	sum
07	22.3	18.1	14.1	15.5	13.9	11.2	95	77	56	1018.96	1013.55	49.0	9.0	0.0	31.50
08	25.7	21.0	14.7	20.2	16.4	12.7	90	75	62	1021.33	1014.90	43.6	6.7	0.0	0.00
09	21.1	18.1	15.3	17.7	16.5	14.5	95	90	79	1029.46	1018.96	15.5	2.8	0.0	50.29
10	21.8	18.4	14.0	17.9	15.7	12.9	95	85	69	1025.40	1018.29	31.0	6.6	0.0	0.00
11	23.4	20.3	15.9	18.7	17.1	14.9	94	82	69	1023.03	1018.63	24.8	5.5	0.0	0.00

October 7, 2019 - October 13, 2019

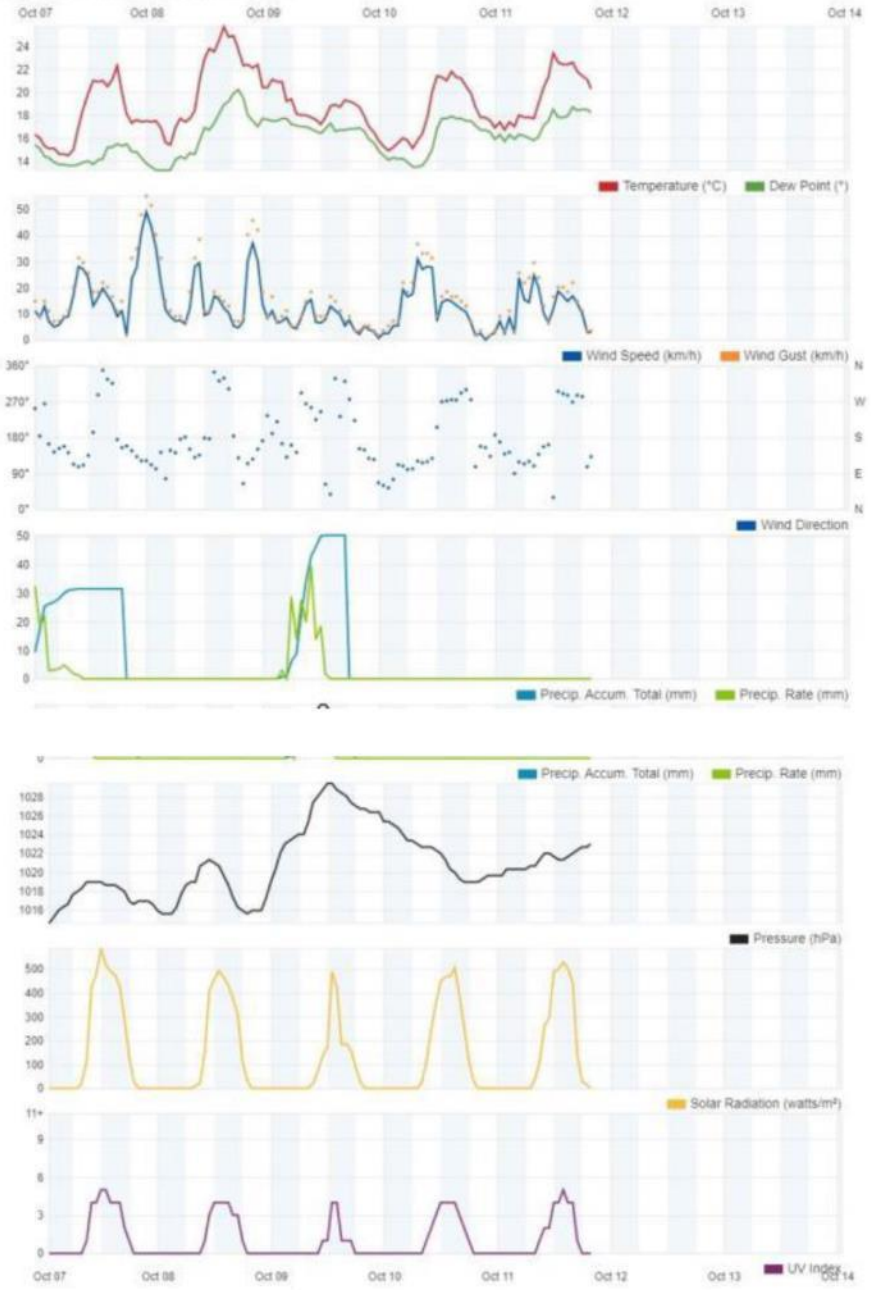
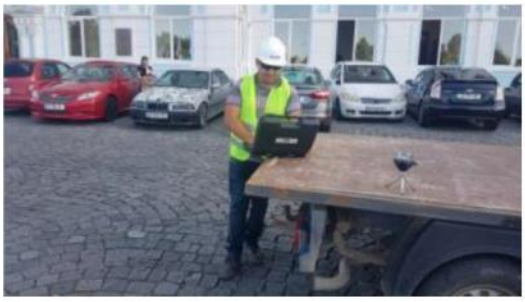


Photo-Documentation:




Conclusion:

"Based on the results of the tests conducted in three locations (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), Monitoring noise levels are under the norm of Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments".

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
Shota Rustaveli University	Day 1 07.10.2019	Morning	09:29	**48.79**	**49.73**	**50**
		Noon	14:09	**50.67**		
		Evening	18:27	**49.28**	**49.28**	**45**
	Day 2 08.10.2019	Morning	09:43	**48.18**	**48.70**	**50**
		Noon	14:39	**49.23**		
		Evening	18:53	**48.57**	**48.57**	**45**
	Day 3 09.10.2019	Morning	09:52	**50.22**	**51.24**	**50**
		Noon	14:57	**53.51**		
		Evening	18:24	**50.17**	**50.17**	**45**
	Day 4 10.10.2019	Morning	09:37	**48.18**	**50.62**	**50**
		Noon	14:39	**49.23**		
		Evening	18:09	**48.57**	**48.57**	**45**
	Day 5 11.10.2019	Morning	09:53	**48.97**	**51.24**	**50**
		Noon	14:46	**53.51**		
		Evening	18:22	**50.17**	**50.17**	**45**

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
The Magnolia Hotel	Day 1 07.10.2019	Morning	09:42	**50.79**	**50.00**	**50**
		Noon	14:02	**49.22**		
		Evening	18:38	**49.90**	**49.90**	**45**
	Day 2 08.10.2019	Morning	09:22	**48.79**	**49.08**	**50**
		Noon	14:02	**49.38**		
		Evening	18:38	**50.49**	**50.49**	**45**
	Day 3 09.10.2019	Morning	09:12	**48.97**	**51.24**	**50**
		Noon	14:57	**53.51**		
		Evening	18:40	**50.17**	**50.17**	**45**
	Day 4 10.10.2019	Morning	09:14	**49.95**	**50.83**	**50**
		Noon	13:38	**51.71**		
		Evening	18:13	**49.41**	**49.41**	**45**
	Day 5 11.10.2019	Morning	09:41	**50.37**	**50.85**	**50**
		Noon	14:31	**51.33**		
		Evening	18:22	**48.20**	**48.20**	**45**

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
School-lyceum "Taoba"	Day 1 07.10.2019	Morning	09:41	**49.95**	**50.83**	**50**
		Noon	13:38	**51.71**		
		Evening	18:13	**49.41**	**49.41**	**45**
	Day 2 08.10.2019	Morning	09:41	**50.37**	**50.85**	**50**
		Noon	14:31	**51.33**		
		Evening	18:22	**48.20**	**48.20**	**45**
	Day 3 09.10.2019	Morning	09:22	**48.79**	**49.73**	**50**
		Noon	14:02	**50.67**		
		Evening	18:38	**49.90**	**49.90**	**45**
	Day 4 10.10.2019	Morning	09:22	**48.18**	**48.70**	**50**
		Noon	14:10	**49.23**		
		Evening	18:52	**48.57**	**48.57**	**45**
	Day 5 11.10.2019	Morning	09:12	**48.97**	**51.24**	**50**
		Noon	14:57	**53.51**		
		Evening	18:40	**50.17**	**50.17**	**45**

8.1.5 November

Report on: Noise Measurement

Monitoring Test

Period of Inspection: 20191111 - 20191115	**Project: Coastal Protection Batumi**	**Locations :**	**1. School-lyceum "Taoba" 2. Shota Rustaveli University 3. The Magnolia Hotel**

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted noise measurements in order to identify and quantify noise level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - noise Levels; the samples have been taken at three location (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), three times a day (morning, afternoon and evening) during five days, during 30 to 46 seconds for each taken sample.

Device Name: **Sound Level Meter PCE-322A**

Noise Standards: Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments"

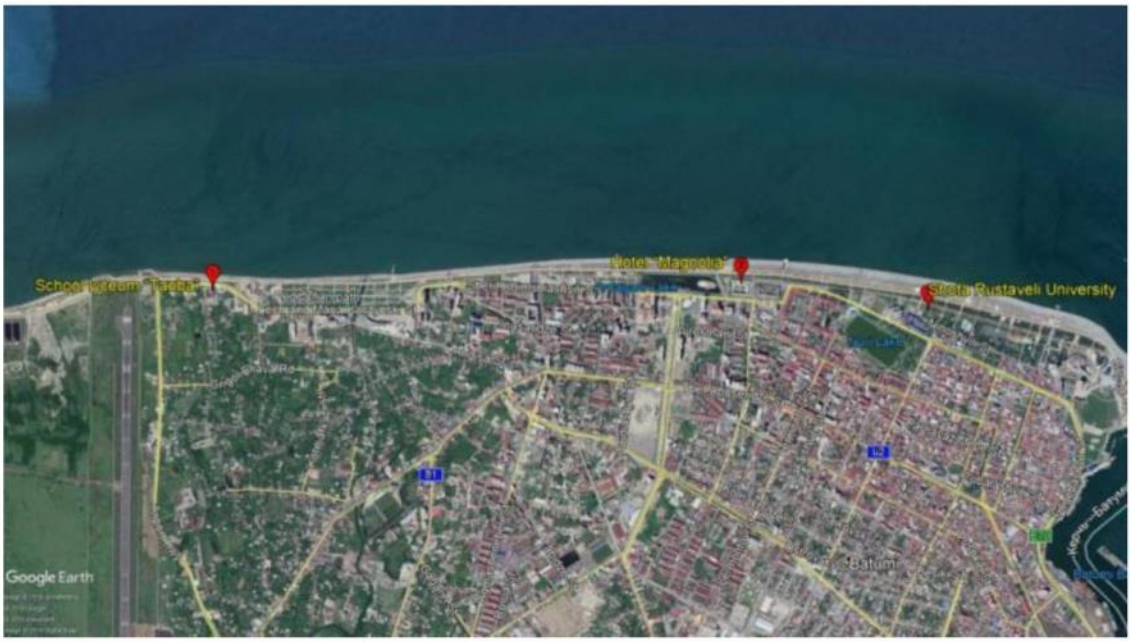
Permissible norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments

N	The applied functions of the spaces and areas	Admissible norms		
		L day (DBA)		
		Day	Evening	L night (DBA)
1	Studying establishments and reading rooms	35	35	35
2	The treatment cabinets of the medical establishments	40	40	40
3	Residential and sleeping areas	35	30	30
4	The treatment and rehabilitation rooms of the inpatient medical establishments	35	30	30
5	The rooms of the hotel/guest houses/motels	40	35	35
6	Trading halls and guest rooms	55	55	55
7	Restaurants, bars, cafes	50	50	50
8	Spectator/listeners' hall	30	30	30
9	Sport halls and pools	55	55	55
10	Small offices (≤100 m^3), working premises and premises	40	40	40

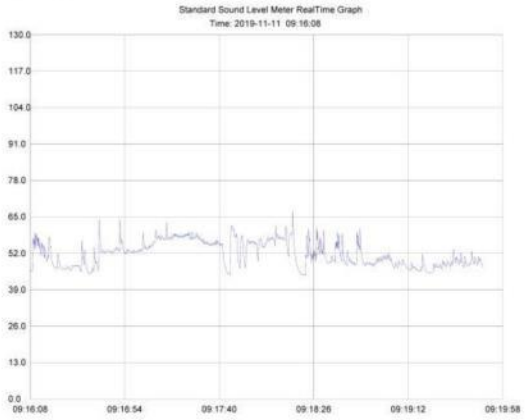
	without office technique			
11	Large offices (≥100 m³), working premises and premised with office technique	45	45	45
12	Conversation premises	35	35	35
13	Territories, distanced from the low multistoried residential houses (number of the floors >6), medical establishments, children and social service objects	50	45	40
14	Territories, distanced from the multistoried residential houses (number of the floors >6), cultural, educational, administrative and scientific establishments	55	50	45
15	Territories, distanced from the hotels, trading, service, sport and social organizations	60	55	50

Note: The threshold #13 and highlighted in the table (yellow) is thresholds, which are considered.

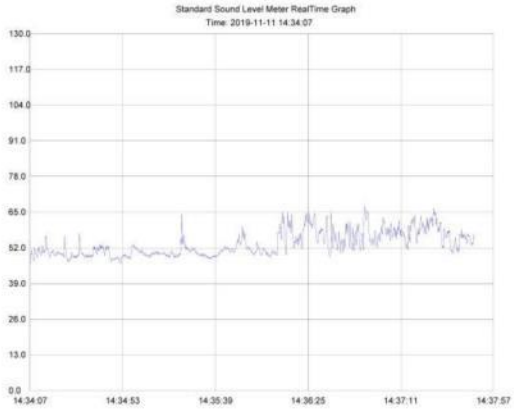
Map with samples points:



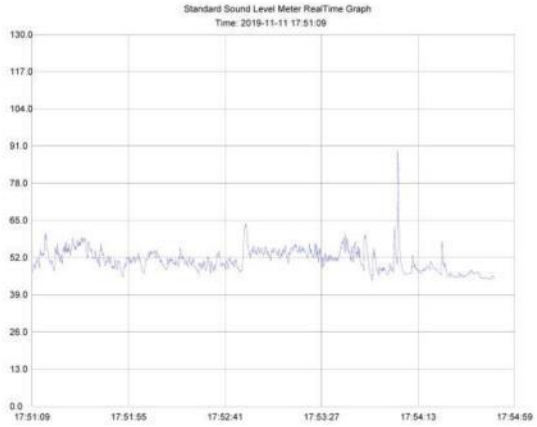
Test results for School-lyceum "Taoba":
Day 1 (11.11.2019):



Start Time: 11-11-2019, 09:16:08
Maxnum: 67.10 11-11-2019, 09:18:15
Minnum: 44.20 11-11-2019, 09:18:21
Sample Rate: 0.10
Average: 51.90

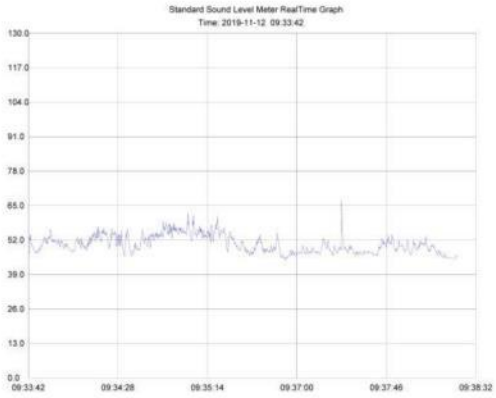


Start Time: 11-11-2019, 14:34:07
Maxnum: 67.10 11-11-2019, 14:36:49
Minnum: 46.20 11-11-2019, 14:34:52
Sample Rate: 0.10
Average: 53.37

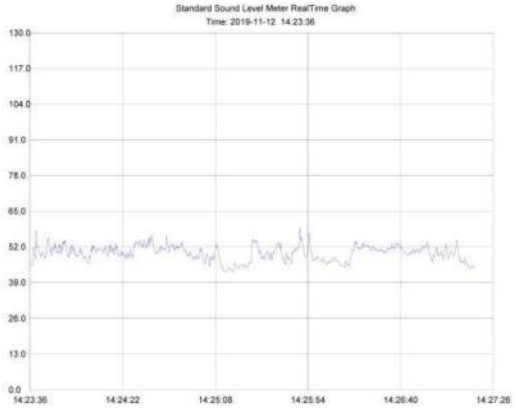


Start Time: 11-11-2019, 17:51:09
Maxnum: 89.40 11-11-2019, 17:54:02
Minnum: 44.10 11-11-2019, 17:53:51
Sample Rate: 0.10
Average: 51.05

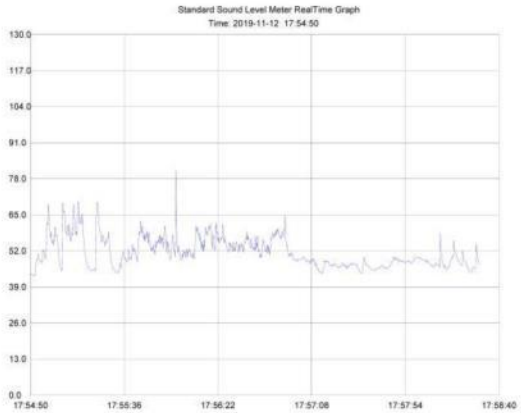
Day 2 (12.11.2019):



Start Time: 12-11-2019, 09:33:42
Maxnum: 67.00 12-11-2019, 09:37:23
Minnum: 44.40 12-11-2019, 09:36:53
Sample Rate: 0.10
Average: 50.39

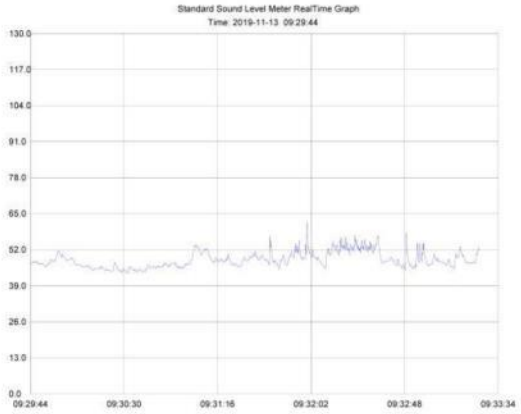


Start Time: 12-11-2019, 14:23:36
Maxnum: 59.30 12-11-2019, 14:25:48
Minnum: 43.00 12-11-2019, 14:25:14
Sample Rate: 0.10
Average: 49.67



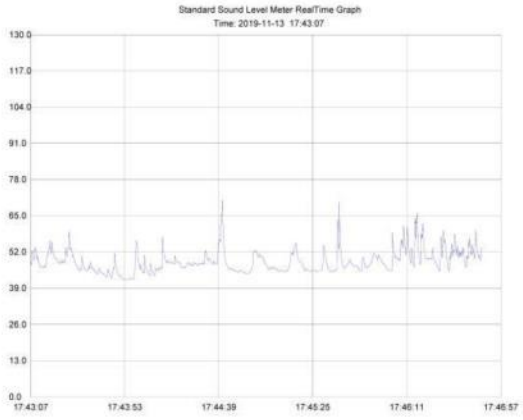
Start Time: 12-11-2019, 17:54:50
Maxnum: 81.20 12-11-2019, 17:56:03
Minnum: 43.10 12-11-2019, 17:54:53
Sample Rate: 0.10
Average: 51.42

Day 3 (13.11.2019):



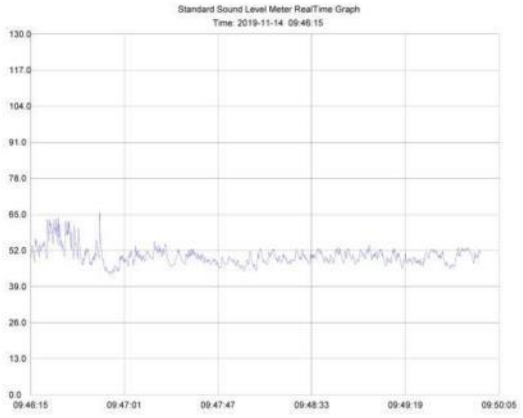
Start Time: 13-11-2019, 09:29:44
Maxnum: 62.20 13-11-2019, 09:31:59
Minnum: 43.60 13-11-2019, 09:30:33
Sample Rate: 0.10
Average: 48.31

Start Time: 13-11-2019, 14:12:48
Maxnum: 59.30 13-11-2019, 14:13:23
Minnum: 43.10 13-11-2019, 14:15:07
Sample Rate: 0.10
Average: 47.80

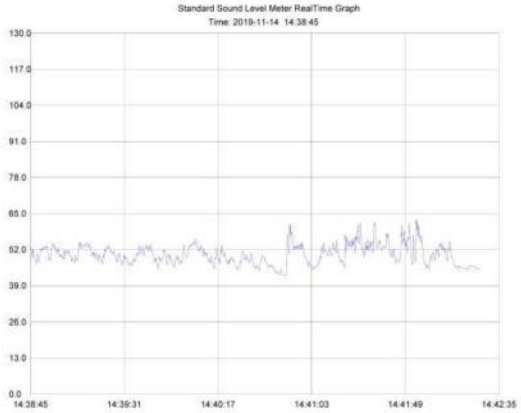


Start Time: 13-11-2019, 17:43:07
Maxnum: 70.70 13-11-2019, 17:44:42
Minnum: 41.90 13-11-2019, 17:43:54
Sample Rate: 0.10
Average: 48.43

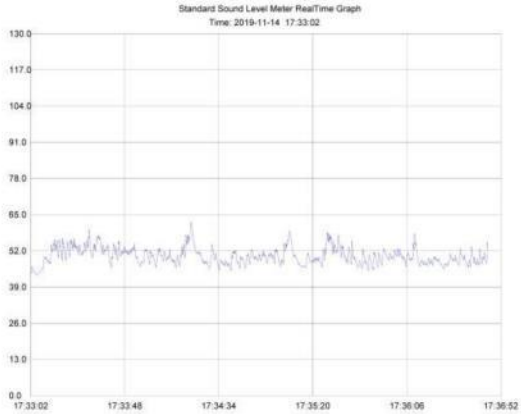
Day 4 (14.11.2019):



Start Time: 14-11-2019, 09:46:15
Maxnum: 65.90 14-11-2019, 09:46:47
Minnum: 43.70 14-11-2019, 09:46:53
Sample Rate: 0.10
Average: 49.96

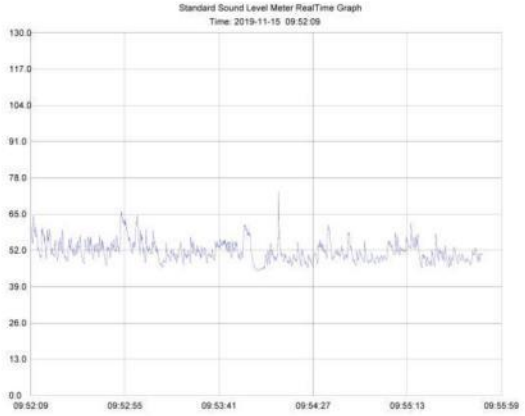


Start Time: 14-11-2019, 14:38:45
Maxnum: 62.90 14-11-2019, 14:41:57
Minnum: 42.60 14-11-2019, 14:40:47
Sample Rate: 0.10
Average: 50.16

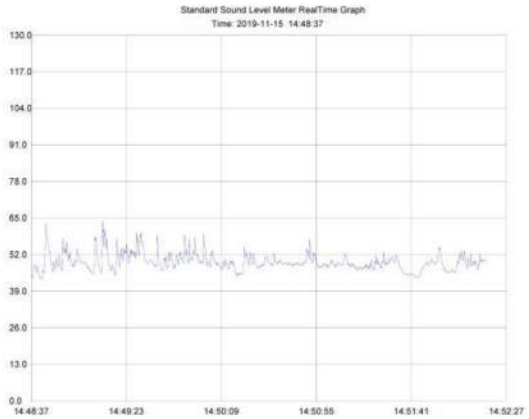


Start Time: 14-11-2019, 17:33:02
Maxnum: 62.40 14-11-2019, 17:34:20
Minnum: 43.40 14-11-2019, 17:33:06
Sample Rate: 0.10
Average: 50.11

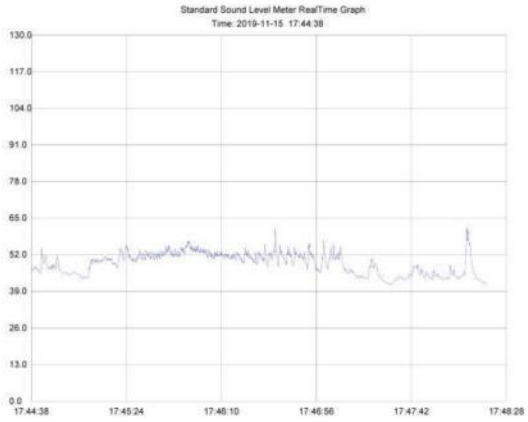
Day 5 (15.11.2019):



Start Time: 15-11-2019, 09:52:09
Maxnum: 73.00 15-11-2019, 09:54:12
Minnum: 44.60 15-11-2019, 09:53:57
Sample Rate: 0.10
Average: 51.59



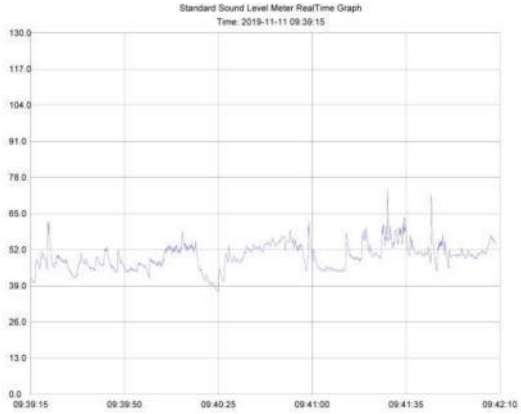
Start Time: 15-11-2019, 14:48:37
Maxnum: 64.20 15-11-2019, 14:49:11
Minnum: 43.20 15-11-2019, 14:48:42
Sample Rate: 0.10
Average: 49.38



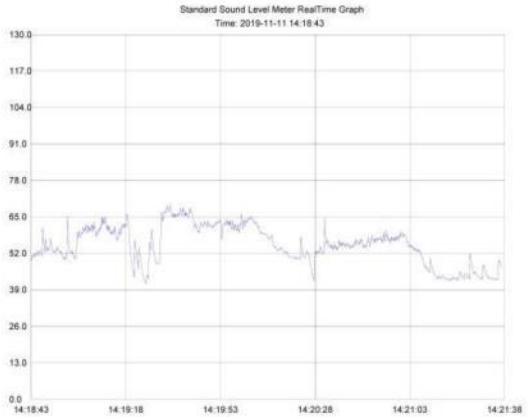
Start Time: 15-11-2019, 17:44:38
Maxnum: 61.60 15-11-2019, 17:48:17
Minnum: 41.30 15-11-2019, 17:47:32
Sample Rate: 0.10
Average: 48.76

Test results for Shota Rustaveli University:

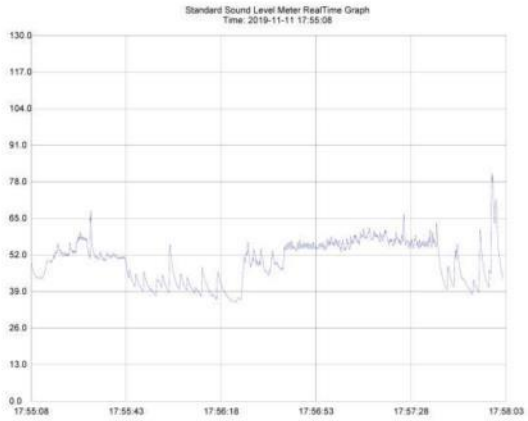
Day 1 (11.11.2019):



Start Time: 11-11-2019, 09:39:15
Maxnum: 73.40 11-11-2019, 09:41:26
Minnum: 37.10 11-11-2019, 09:40:25
Sample Rate: 0.10
Average: 49.70

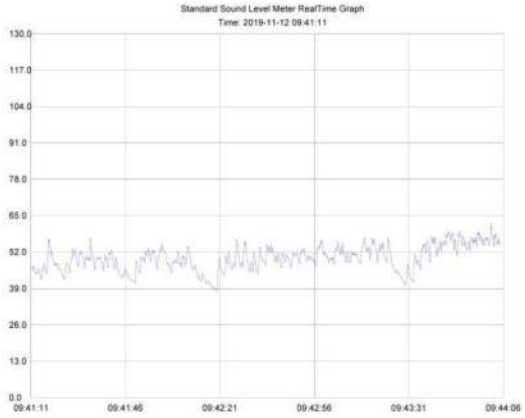


Start Time: 11-11-2019, 14:18:43
Maxnum: 69.30 11-11-2019, 14:19:32
Minnum: 41.10 11-11-2019, 14:19:25
Sample Rate: 0.10
Average: 54.98

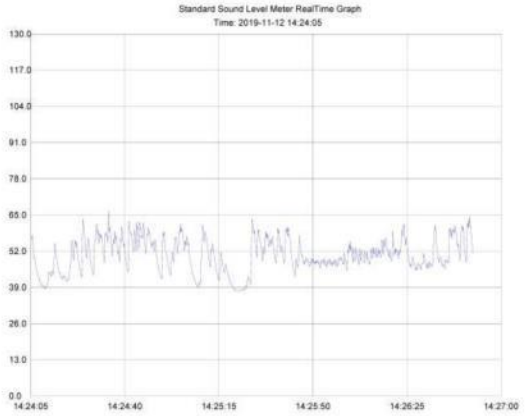


Start Time: 11-11-2019, 17:55:08
Maxnum: 80.80 11-11-2019, 17:57:57
Minnum: 35.10 11-11-2019, 17:56:24
Sample Rate: 0.10
Average: 49.77

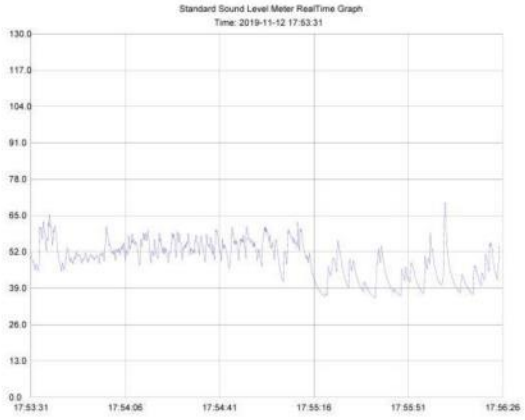
Day 2 (12.11.2019)



Start Time: 12-11-2019, 09:41:11
Maxnum: 62.30 12-11-2019, 09:44:00
Minnum: 38.10 12-11-2019, 09:42:20
Sample Rate: 0.10
Average: 49.78

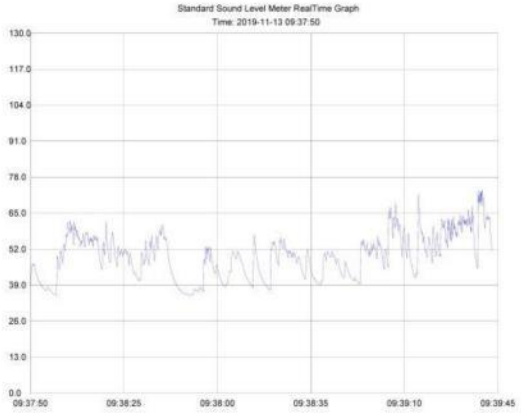


Start Time: 12-11-2019, 14:24:05
Maxnum: 66.50 12-11-2019, 14:24:32
Minnum: 37.60 12-11-2019, 14:25:24
Sample Rate: 0.10
Average: 50.56



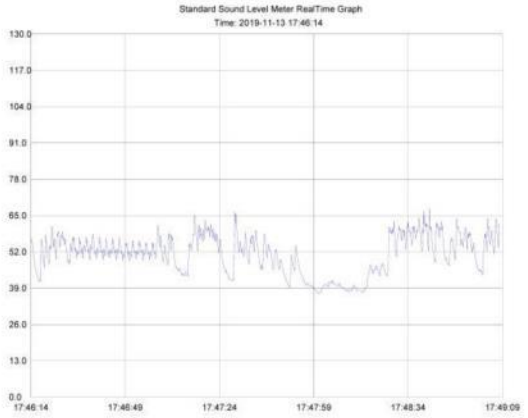
Start Time: 12-11-2019, 17:53:31
Maxnum: 69.70 12-11-2019, 17:56:04
Minnum: 35.60 12-11-2019, 17:55:39
Sample Rate: 0.10
Average: 49.32

Day 3 (13.11.2019):



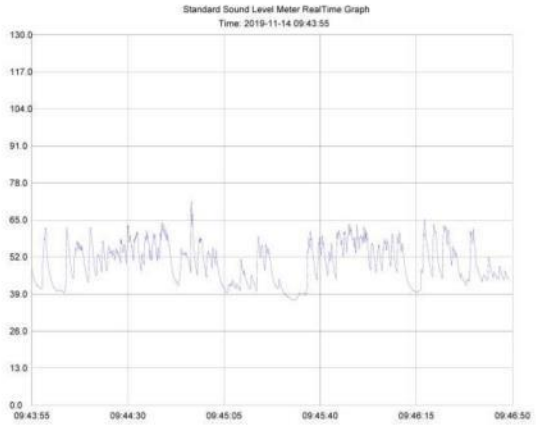
Start Time: 13-11-2019, 09:37:50
Maxnum: 73.40 13-11-2019, 09:39:45
Minnum: 35.30 13-11-2019, 09:38:47
Sample Rate: 0.10
Average: 49.49

Start Time: 13-11-2019, 14:13:47
Maxnum: 70.20 13-11-2019, 14:13:47
Minnum: 37.40 13-11-2019, 14:15:58
Sample Rate: 0.10
Average: 51.68

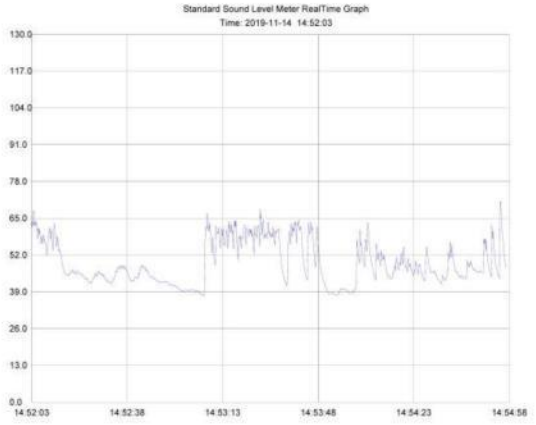


Start Time: 13-11-2019, 17:46:14
Maxnum: 67.50 13-11-2019, 17:48:44
Minnum: 37.30 13-11-2019, 17:48:01
Sample Rate: 0.10
Average: 50.99

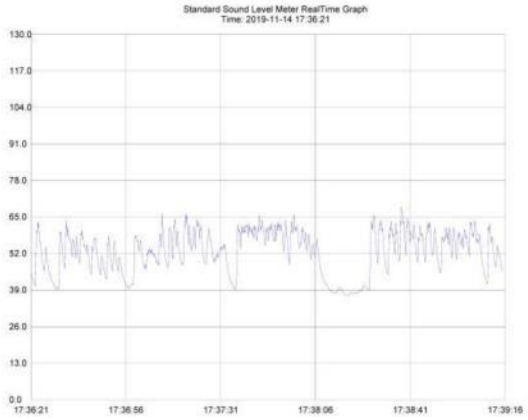
Day 4 (14.11.2019):



Start Time: 14-11-2019, 09:43:55
Maxnum: 71.60 14-11-2019, 09:44:51
Minnum: 37.00 14-11-2019, 09:45:30
Sample Rate: 0.10
Average: 50.06

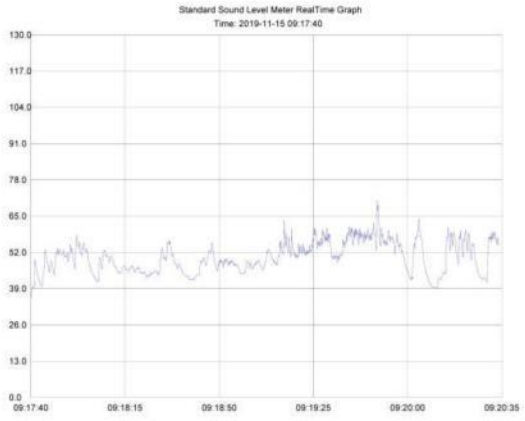


Start Time: 14-11-2019, 14:52:03
Maxnum: 71.10 14-11-2019, 14:54:54
Minnum: 37.60 14-11-2019, 14:53:05
Sample Rate: 0.10
Average: 49.19

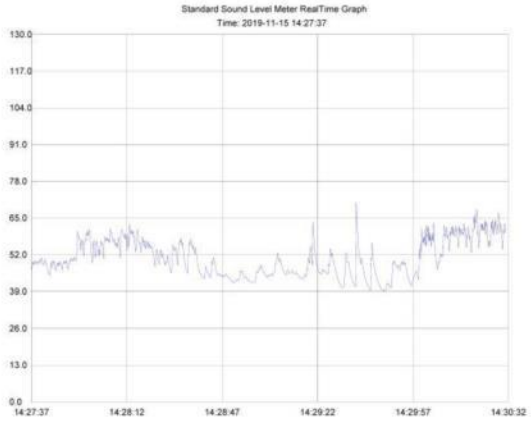


Start Time: 14-11-2019, 17:36:21
Maxnum: 68.70 14-11-2019, 17:38:37
Minnum: 37.00 14-11-2019, 17:36:18
Sample Rate: 0.10
Average: 52.59

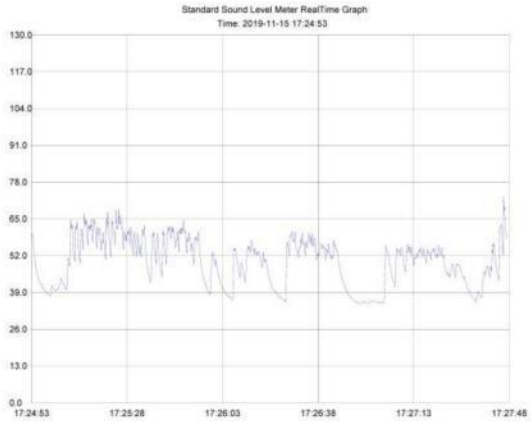
Day 5 (15.11.2019):



Start Time: 15-11-2019, 09:17:40
Maxnum: 70.60 15-11-2019, 09:19:48
Minnum: 35.80 15-11-2019, 09:20:12
Sample Rate: 0.10
Average: 50.29



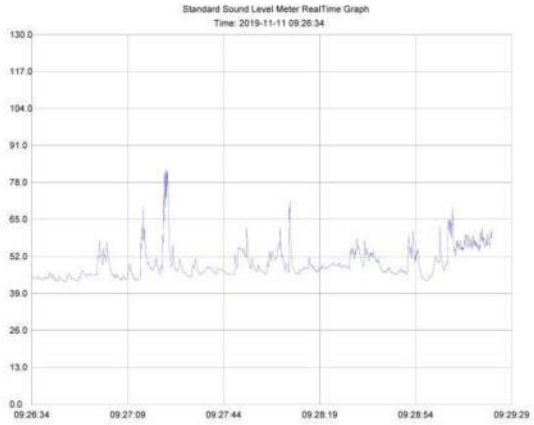
Start Time: 15-11-2019, 14:27:37
Maxnum: 70.60 15-11-2019, 14:29:37
Minnum: 39.20 15-11-2019, 14:29:45
Sample Rate: 0.10
Average: 50.73



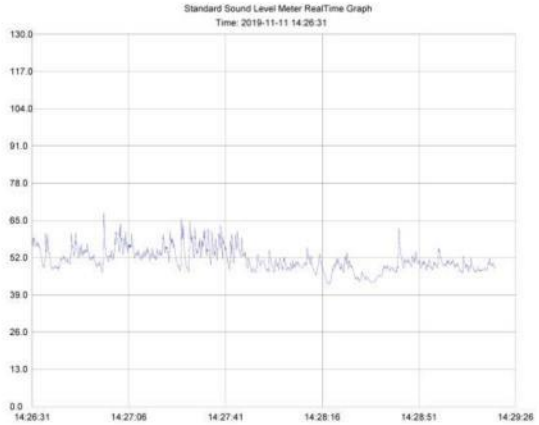
Start Time: 15-11-2019, 17:24:53
Maxnum: 72.80 15-11-2019, 17:27:45
Minnum: 35.00 15-11-2019, 17:26:57
Sample Rate: 0.10
Average: 49.84

Test results for The Magnolia Hotel:

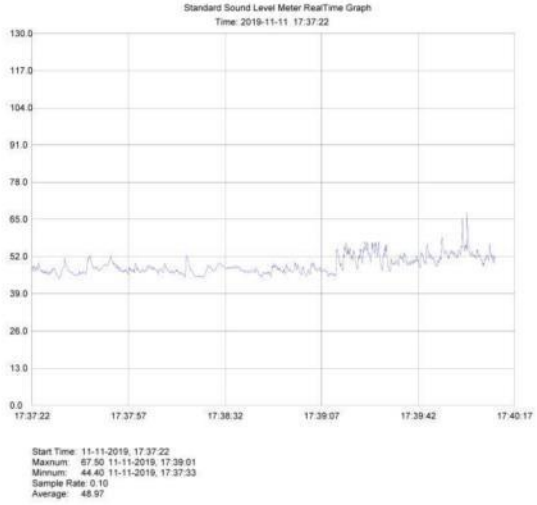
Day 1 (11.11.2019):



Start Time: 11-11-2019, 09:26:34
Maxnum: 82.70 11-11-2019, 09:27:24
Minnum: 43.10 11-11-2019, 09:26:46
Sample Rate: 0.10
Average: 49.52

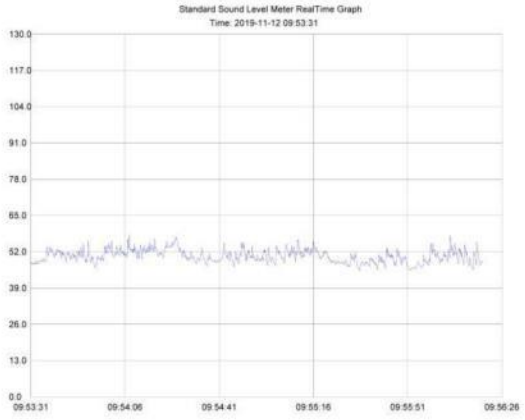


Start Time: 11-11-2019, 14:26:31
Maxnum: 67.60 11-11-2019, 14:26:56
Minnum: 42.60 11-11-2019, 14:28:19
Sample Rate: 0.10
Average: 51.22

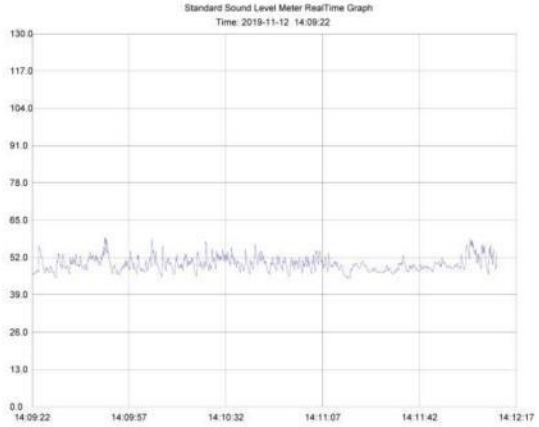


Start Time: 11-11-2019, 17:37:22
Maxnum: 67.50 11-11-2019, 17:39:01
Minnum: 44.40 11-11-2019, 17:37:33
Sample Rate: 0.10
Average: 48.97

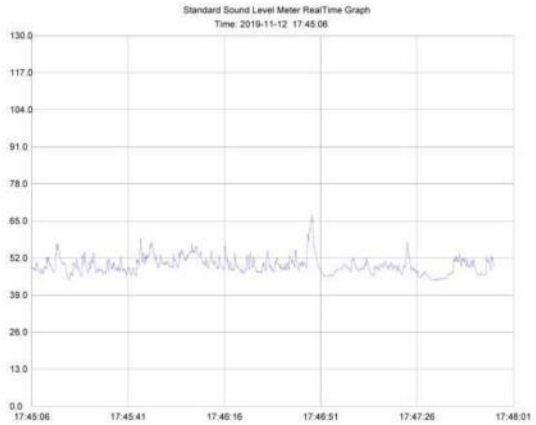
Day 2 (12.11.2019):



Start Time: 12-11-2019, 09:53:31
Maxnum: 58.10 12-11-2019, 09:55:16
Minnum: 45.30 12-11-2019, 09:55:33
Sample Rate: 0.10
Average: 50.37

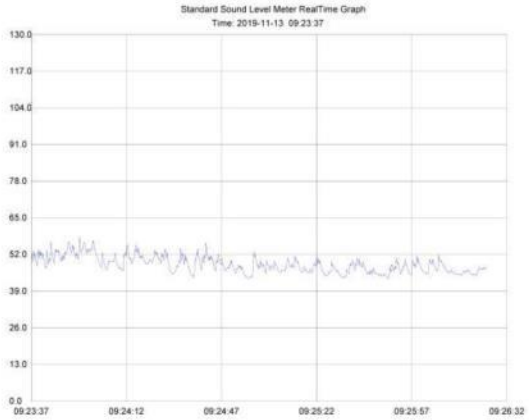


Start Time: 12-11-2019, 14:09:22
Maxnum: 59.00 12-11-2019, 14:09:46
Minnum: 44.80 12-11-2019, 14:11:17
Sample Rate: 0.10
Average: 49.67

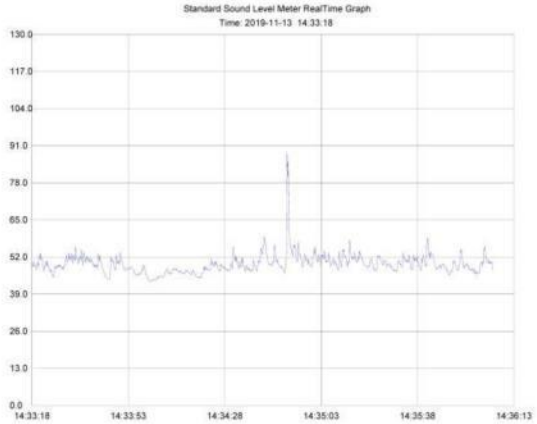


Start Time: 12-11-2019, 17:45:06
Maxnum: 67.00 12-11-2019, 17:46:47
Minnum: 44.10 12-11-2019, 17:47:34
Sample Rate: 0.10
Average: 49.43

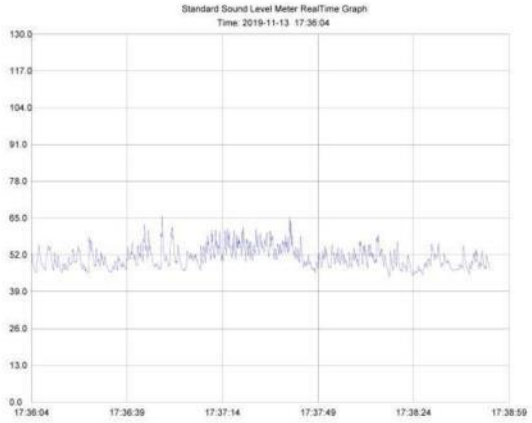
Day 3 (13.11.2019):



Start Time: 13-11-2019, 09:23:37
Maxnum: 57.90 13-11-2019, 09:23:54
Minnum: 43.30 13-11-2019, 09:25:47
Sample Rate: 0.10
Average: 46.41

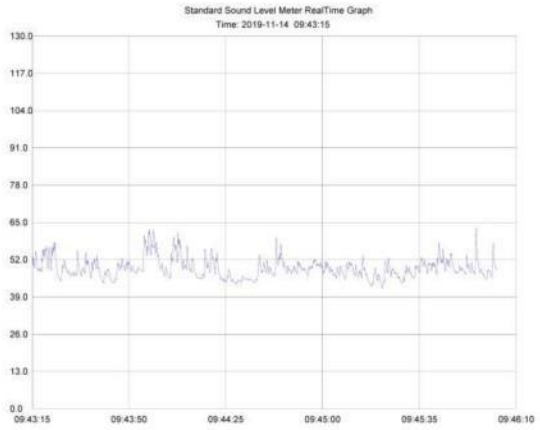


Start Time: 13-11-2019, 14:33:18
Maxnum: 88.60 13-11-2019, 14:34:49
Minnum: 43.50 13-11-2019, 14:34:01
Sample Rate: 0.10
Average: 49.50

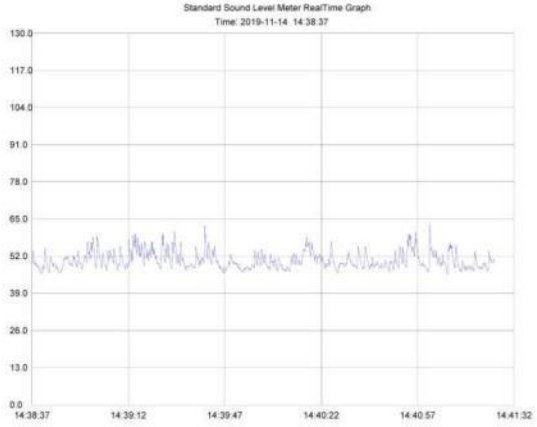


Start Time: 13-11-2019, 17:36:04
Maxnum: 65.90 13-11-2019, 17:36:51
Minnum: 44.20 13-11-2019, 17:38:15
Sample Rate: 0.10
Average: 51.04

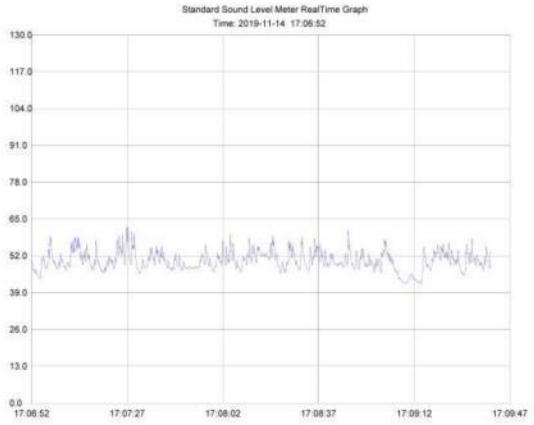
Day 4 (14.11.2019):



Start Time: 14-11-2019, 09:43:15
Maxnum: 63.40 14-11-2019, 09:45:56
Minnum: 42.00 14-11-2019, 09:45:21
Sample Rate: 0.10
Average: 49.00

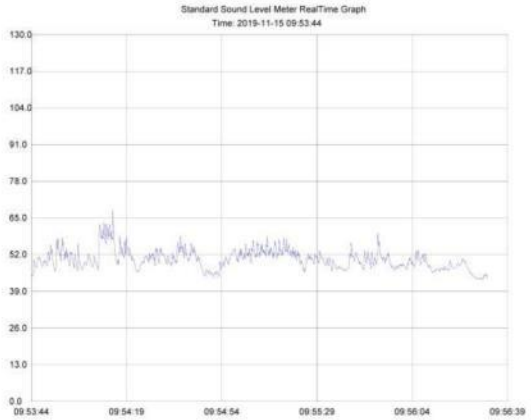


Start Time: 14-11-2019, 14:38:37
Maxnum: 63.30 14-11-2019, 14:41:02
Minnum: 45.60 14-11-2019, 14:41:10
Sample Rate: 0.10
Average: 50.50

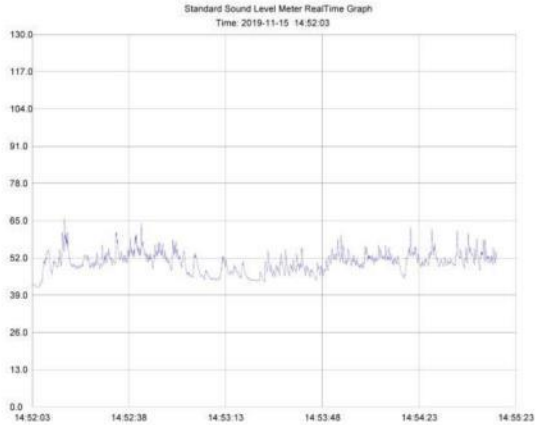


Start Time: 14-11-2019,17:06:52
Maxnum: 62.40 14-11-2019, 17:07:27
Minnum: 42.30 14-11-2019, 17:09:15
Sample Rate: 0.10
Average: 50.27

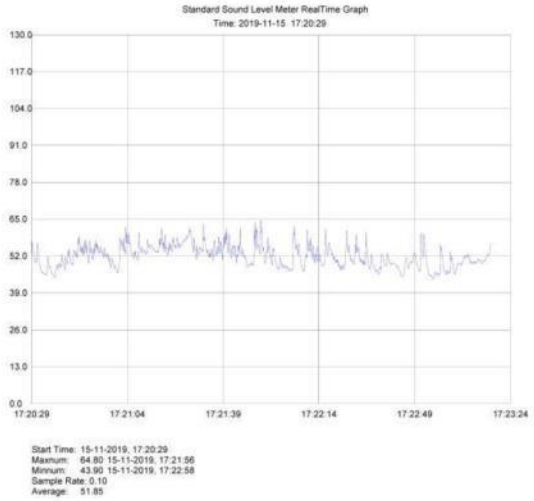
Day 5 (15.11.2019):



Start Time: 15-11-2019, 09:53:44
Maxnum: 67.70 15-11-2019, 09:54:11
Minnum: 43.20 15-11-2019, 09:56:28
Sample Rate: 0.10
Average: 50.23



Start Time: 15-11-2019, 14:52:03
Maxnum: 65.90 15-11-2019, 14:52:17
Minnum: 41.70 15-11-2019, 14:52:06
Sample Rate: 0.10
Average: 50.49



Meteorological Data (11.11.2019 - 15.11.2019) Batumi, Georgia

Weather History & Observations

2019	Temp. (°C)			Dew Point (°C)			Humidity (%)			Pressure (hPa)		Wind (km/h)			Precip. (mm)
Nov	high	avg	low	high	avg	low	high	avg	low	high	low	high	avg	low	sum
11	24.4	18.5	14.0	10.3	3.9	-2.6	73	40	22	1024.38	1021.00	60.8	26.2	0.0	0.00
12	22.3	16.6	12.3	12.6	5.8	0.5	84	50	31	1025.74	1023.37	54.0	18.3	0.0	0.00
13	21.1	15.8	11.5	10.7	5.3	0.5	82	51	31	1024.04	1018.96	49.0	16.7	0.0	0.00
14	27.2	19.8	13.7	10.5	2.5	-2.9	66	33	16	1019.98	1016.59	61.6	24.7	0.0	0.00
15	26.0	21.4	14.9	7.9	0.8	-4.4	47	26	19	1023.37	1018.63	59.8	26.9	0.0	0.00

November 11, 2019 - November 17, 2019

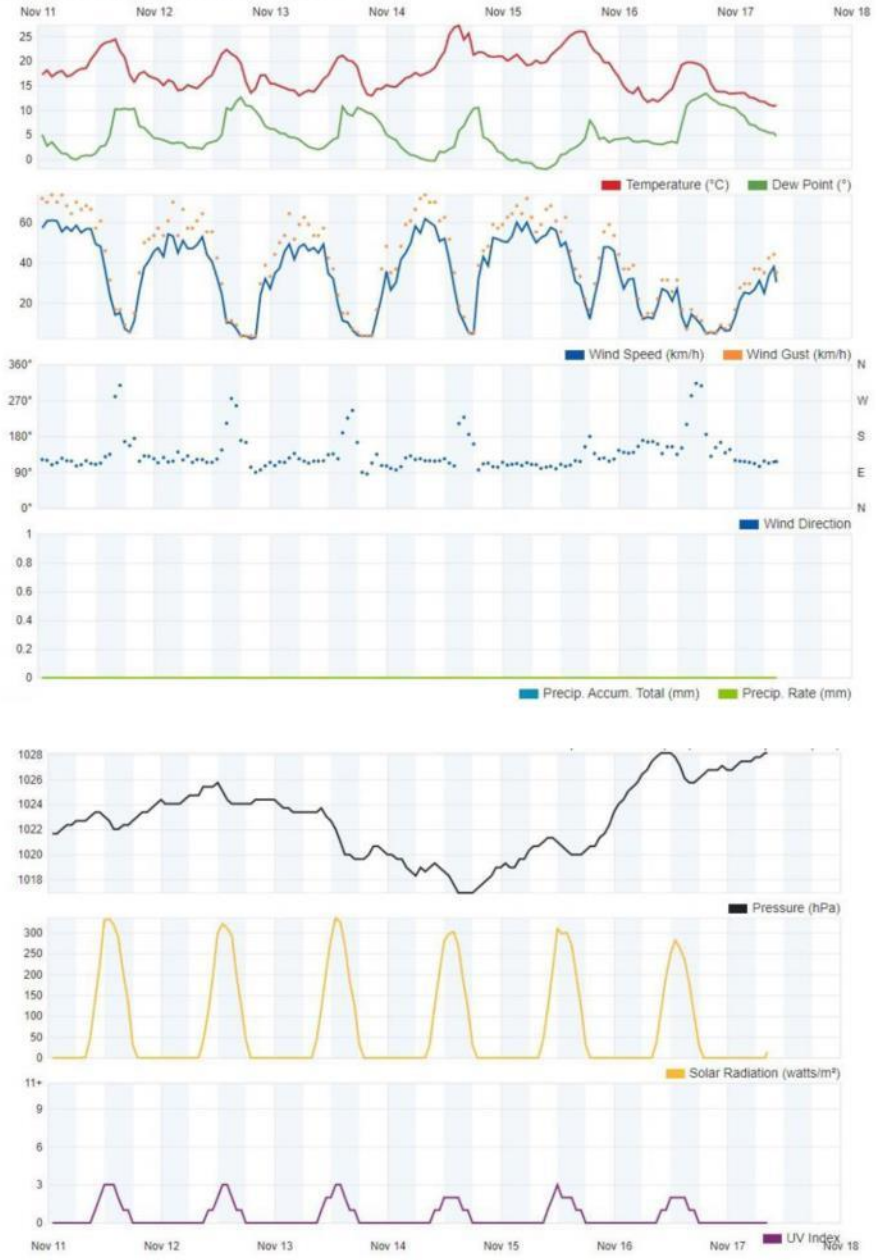


Photo-Documentation:




Conclusion:

"Based on the results of the tests conducted in three locations (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), Monitoring noise levels are under the norm of Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments".

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	Thresholds of daily mean by Georgian law (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
Shota Rustaveli University	Day 1 11.11.2019	Morning	09:16	51.90	52.63	50
		Noon	14:34	53.37		
		Evening	17:51	51.05	51.05	45
	Day 2 12.11.2019	Morning	09:33	50.39	50.03	50
		Noon	14:23	49.67		
		Evening	17:54	51.42	51.42	45
	Day 3 13.11.2019	Morning	09:29	48.31	48.05	50
		Noon	14:12	47.80		
		Evening	17:43	48.43	48.43	45
	Day 4 14.11.2019	Morning	09:46	49.96	50.06	50
		Noon	14:38	50.16		
		Evening	17:33	50.11	50.11	45
	Day 5 15.11.2019	Morning	09:52	51.59	50.48	50
		Noon	14:48	49.38		
		Evening	17:44	48.76	48.76	45

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	Thresholds of daily mean by Georgian law (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
The Magnolia Hotel	Day 1 11.11.2019	Morning	09:39	49.70	52.34	50
		Noon	14:18	54.98		
		Evening	17:55	49.77	49.77	45
	Day 2 12.11.2019	Morning	09:41	49.78	50.17	50
		Noon	14:24	50.56		
		Evening	17:53	49.32	49.32	45
	Day 3 13.11.2019	Morning	09:37	49.49	50.58	50
		Noon	14:13	51.68		
		Evening	17:46	50.99	50.99	45
	Day 4 14.11.2019	Morning	09:43	50.06	49.62	50
		Noon	14:52	49.19		
		Evening	17:36	52.59	52.59	45
	Day 5 15.11.2019	Morning	09:17	50.29	50.51	50
		Noon	14:27	50.73		
		Evening	17:24	49.84	49.84	45

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
School-lyceum "Taoba"	Day 1 11.11.2019	Morning	09:26	**49.52**	**50.37**	**50**
		Noon	14:26	**51.22**		
		Evening	17:37	**48.97**	**48.97**	**45**
	Day 2 12.11.2019	Morning	09:53	**50.37**	**50.02**	**50**
		Noon	14:09	**49.67**		
		Evening	17:45	**49.43**	**49.43**	**45**
	Day 3 13.11.2019	Morning	09:23	**48.41**	**48.95**	**50**
		Noon	14:33	**49.50**		
		Evening	17:36	**51.04**	**51.04**	**45**
	Day 4 14.11.2019	Morning	09:43	**49.00**	**49.75**	**50**
		Noon	14:38	**50.50**		
		Evening	17:06	**50.27**	**50.27**	**45**
	Day 5 15.11.2019	Morning	09:53	**50.23**	**50.36**	**50**
		Noon	14:52	**50.49**		
		Evening	17:20	**51.85**	**51.85**	**45**

8.1.6 December

Report on: Noise Measurement

Monitoring Test

Period of Inspection: 20191209 - 20191213	**Project: Coastal Protection Batumi**	**Locations :**	**1. School-lyceum "Taoba" 2. Shota Rustaveli University 3. The Magnolia Hotel**

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted noise measurements in order to identify and quantify noise level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - noise Levels; the samples have been taken at three location (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), three times a day (morning, afternoon and evening) during five days, during 35 to 46 seconds for each taken sample.

Device Name: **Sound Level Meter PCE-322A**

Noise Standards: Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments"

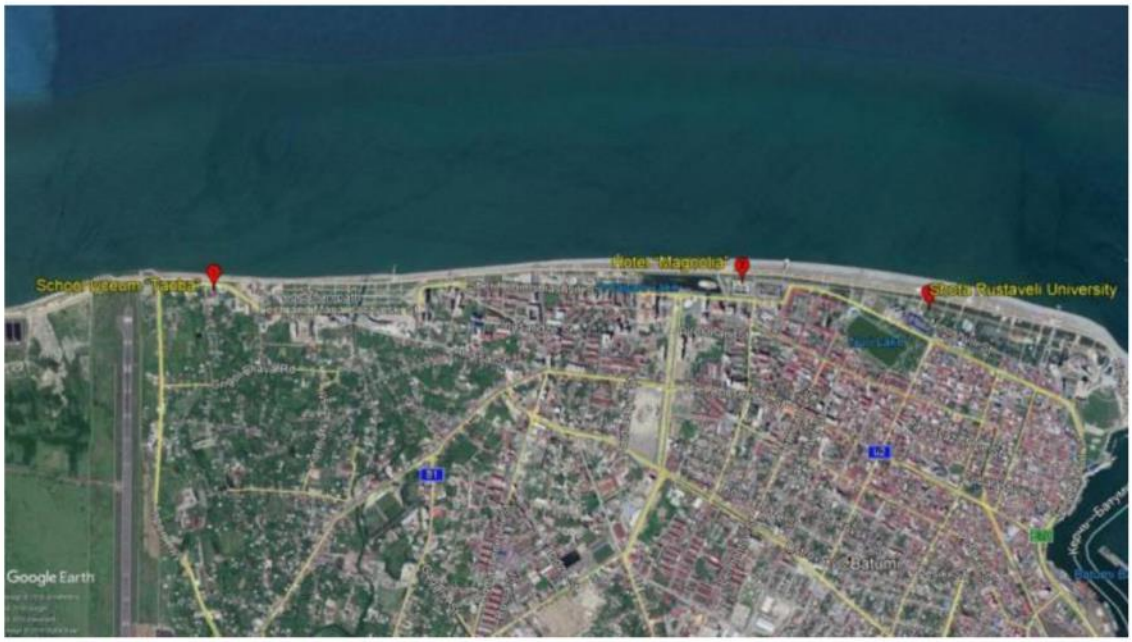
Permissible norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments

N	The applied functions of the spaces and areas	Admissible norms		
		L day (DBA)		
		Day	Evening	L night (DBA)
1	Studying establishments and reading rooms	35	35	35
2	The treatment cabinets of the medical establishments	40	40	40
3	Residential and sleeping areas	35	30	30
4	The treatment and rehabilitation rooms of the inpatient medical establishments	35	30	30
5	The rooms of the hotel/guest houses/motels	40	35	35
6	Trading halls and guest rooms	55	55	55
7	Restaurants, bars, cafes	50	50	50
8	Spectator/listeners' hall	30	30	30
9	Sport halls and pools	55	55	55
10	Small offices (≤100 m^3), working premises and premises	40	40	40

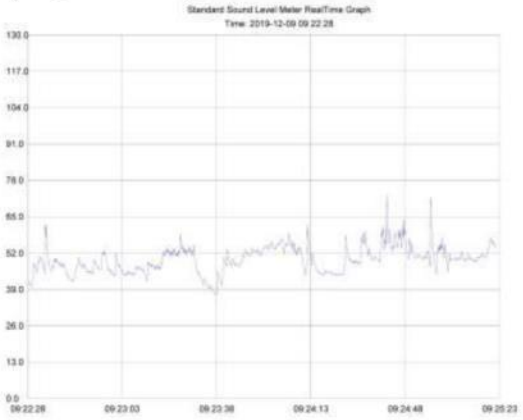
	without office technique			
11	Large offices (≥100 m³), working premises and premised with office technique	45	45	45
12	Conversation premises	35	35	35
13	Territories, distanced from the low multistoried residential houses (number of the floors >6), medical establishments, children and social service objects	50	45	40
14	Territories, distanced from the multistoried residential houses (number of the floors >6), cultural, educational, administrative and scientific establishments	55	50	45
15	Territories, distanced from the hotels, trading, service, sport and social organizations	60	55	50

Note: The threshold #13 and highlighted in the table (yellow) is thresholds, which are considered.

Map with samples points:

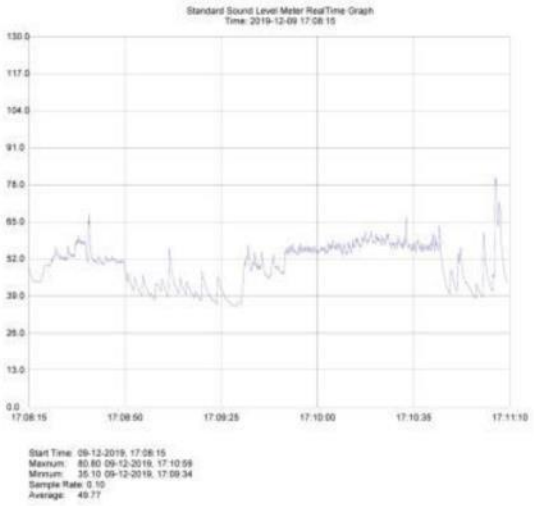


Test results for School-lyceum "Taoba":
Day 1 (09.12.2019):



Start Time: 09-12-2019, 09:22:28
Maxmum: 73.40 09-12-2019, 09:24:21
Minmum: 37.10 09-12-2019, 09:23:38
Sample Rate: 0.10
Average: 49.70

Start Time: 09-12-2019, 14:38:04
Maxmum: 69.30 09-12-2019, 14:38:56
Minmum: 41.10 09-12-2019, 14:38:44
Sample Rate: 0.10
Average: 54.98

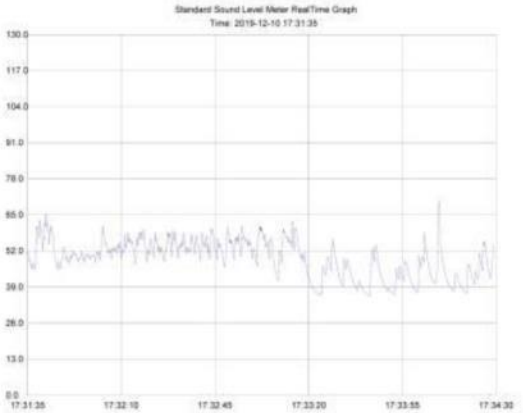


Start Time: 09-12-2019, 17:08:15
Maximum: 80.80 09-12-2019, 17:10:59
Minimum: 35.10 09-12-2019, 17:09:34
Sample Rate: 0.10
Average: 49.77

Day 2 (10.12.2019):

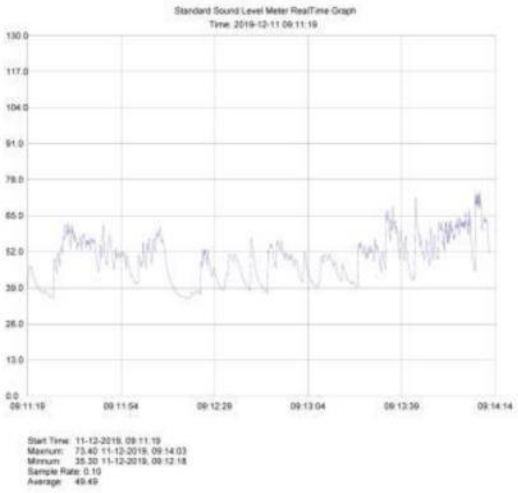
Start Time: 10-12-2019, 09:19:10
Maximum: 82.30 10-12-2019, 09:21:56
Minimum: 39.10 10-12-2019, 09:20:19
Sample Rate: 0.10
Average: 49.78

Start Time: 10-12-2019, 14:11:50
Maxmum: 66.50 10-12-2019, 14:12:15
Minmum: 37.60 10-12-2019, 14:13:11
Sample Rate: 0.10
Average: 50.58

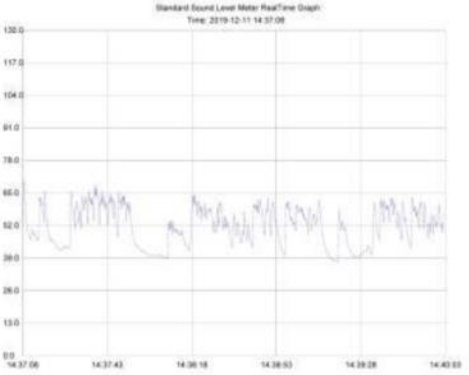


Start Time: 10-12-2019, 17:31:35
Maxmum: 69.70 10-12-2019, 17:34:21
Minmum: 35.60 10-12-2019, 17:33:43
Sample Rate: 0.10
Average: 49.32

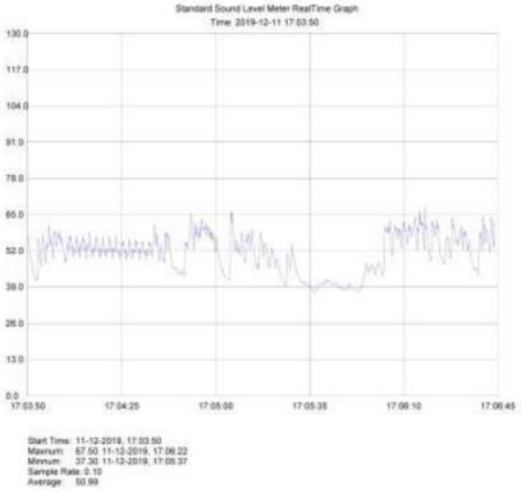
Day 3 (11.12.2019):



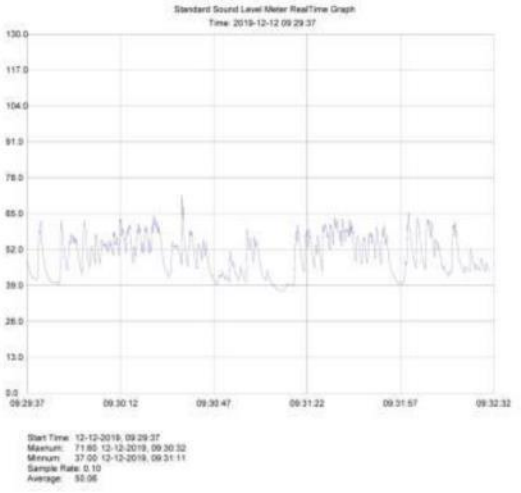
Start Time: 11-12-2019, 09:11:19
Maxmum: 73.40 11-12-2019, 09:14:03
Minmum: 35.30 11-12-2019, 09:12:18
Sample Rate: 0.10
Average: 49.49



Start Time: 11-12-2019, 14:37:06
Maxmum: 70.20 11-12-2019, 14:37:06
Minmum: 37.40 11-12-2019, 14:38:17
Sample Rate: 0.10
Average: 51.66



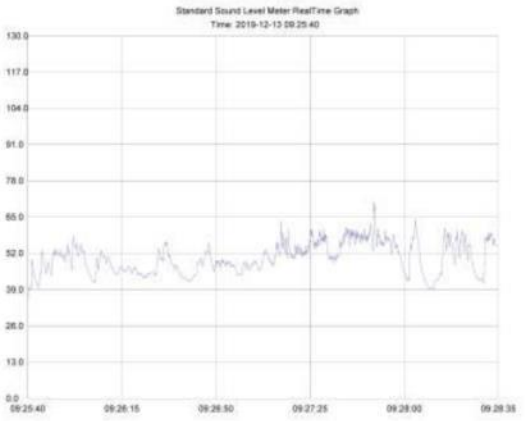
Day 4 (12.12.2019):



Start Time: 12-12-2019, 14:22:56
Maximum: 71.10 12-12-2019, 14:25:47
Minimum: 37.80 12-12-2019, 14:23:58
Sample Rate: 0.10
Average: 49.19

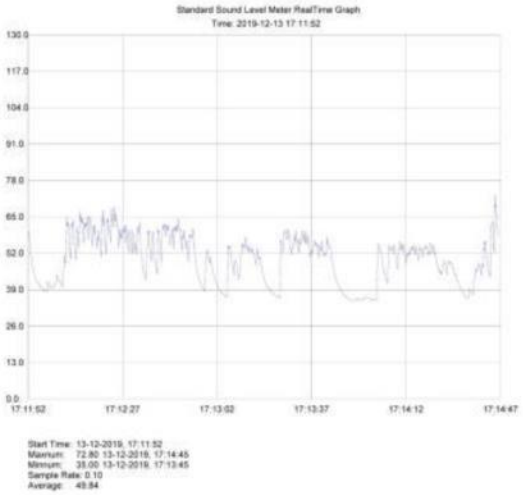
Start Time: 12-12-2019, 17:52:03
Maximum: 68.70 12-12-2019, 17:54:19
Minimum: 37.00 12-12-2019, 17:53:59
Sample Rate: 0.10
Average: 52.59

Day 5 (13.12.2019):



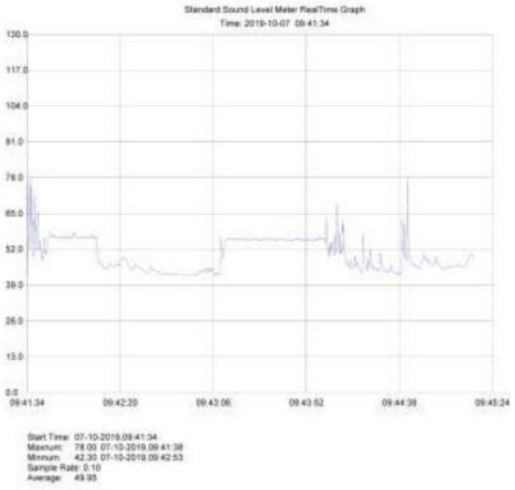
Start Time: 13-12-2019, 09:25:40
Maximum: 70.60 13-12-2019, 09:27:43
Minimum: 35.90 13-12-2019, 09:25:40
Sample Rate: 0.10
Average: 50.29

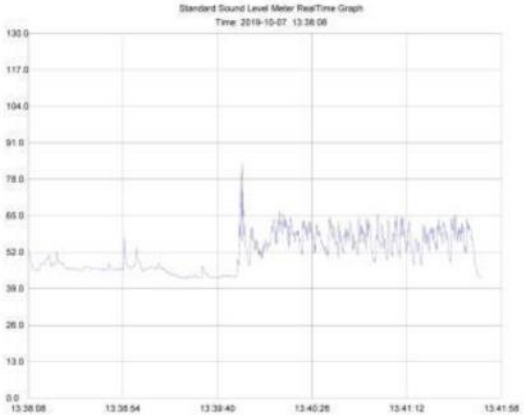
Start Time: 13-12-2019, 14:18:19
Maximum: 70.60 13-12-2019, 14:20:19
Minimum: 39.20 13-12-2019, 14:20:27
Sample Rate: 0.10
Average: 50.73



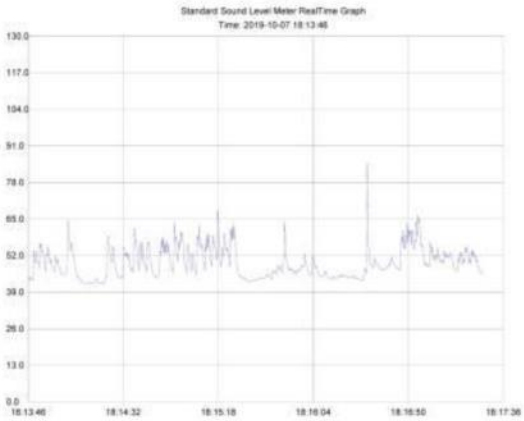
Test results for Shota Rustaveli University:

Day 1 (09.12.2019):



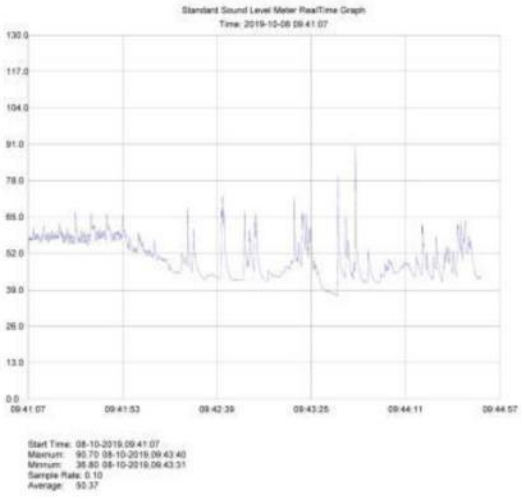


Start Time: 07-10-2019,13:38:08
Maximum: 84.10 07-10-2019,13:39:55
Minimum: 42.60 07-10-2019,13:39:32
Sample Rate: 0.10
Average: 51.71

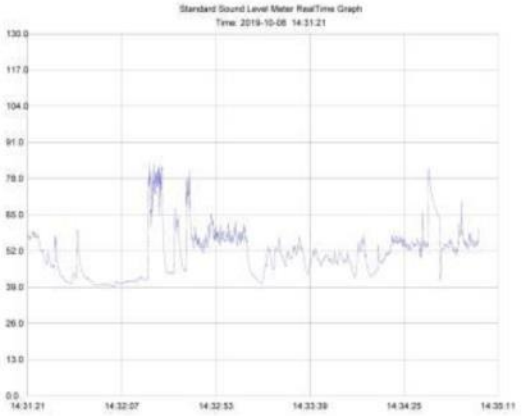


Start Time: 07-10-2019,18:13:46
Maximum: 84.90 07-10-2019,18:16:33
Minimum: 41.90 07-10-2019,18:14:01
Sample Rate: 0.10
Average: 49.41

Day 2 (10.12.2019)



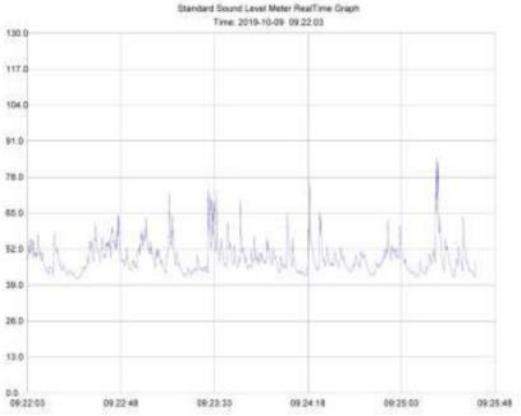
Start Time: 08-10-2019,09:41:07
Maxmum: 90.70 08-10-2019,09:43:40
Minmum: 36.80 08-10-2019,09:43:31
Sample Rate: 0.10
Average: 50.37



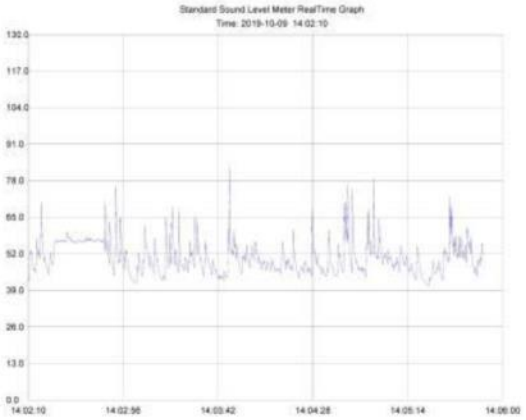
Start Time: 08-10-2019,14:31:21
Maxmum: 83.70 08-10-2019,14:32:19
Minmum: 39.40 08-10-2019,14:32:00
Sample Rate: 0.10
Average: 51.33

Start Time: 08-10-2019,18:22:19
Maximum: 69.20 08-10-2019,18:25:45
Minimum: 42.10 08-10-2019,18:25:30
Sample Rate: 0.10
Average: 48.20

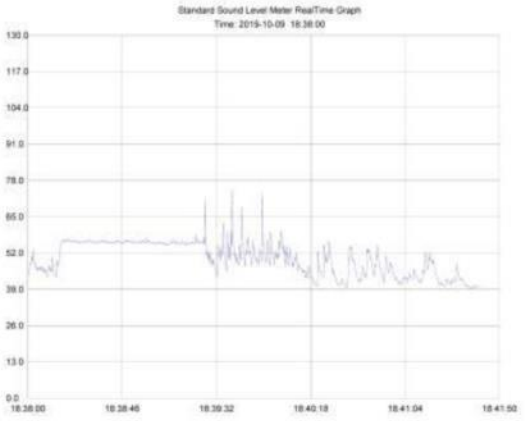
Day 3 (11.12.2019):



Start Time: 09-10-2019,09:22:03
Maximum: 85.10 09-10-2019,09:25:23
Minimum: 41.20 09-10-2019,09:22:34
Sample Rate: 0.10
Average: 48.79

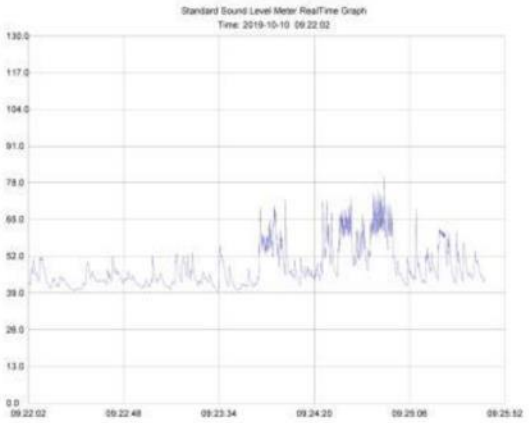


Start Time: 09-10-2019,14:02:10
Maxmum: 83.80 09-10-2019,14:03:49
Minmum: 40.60 09-10-2019,14:05:32
Sample Rate: 0.10
Average: 50.67



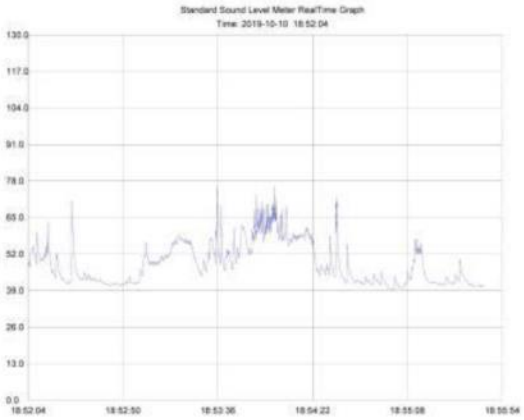
Start Time: 09-10-2019,18:38:00
Maxmum: 74.90 09-10-2019,18:39:46
Minmum: 39.30 09-10-2019,18:41:34
Sample Rate: 0.10
Average: 49.90

Day 4 (12.12.2019):



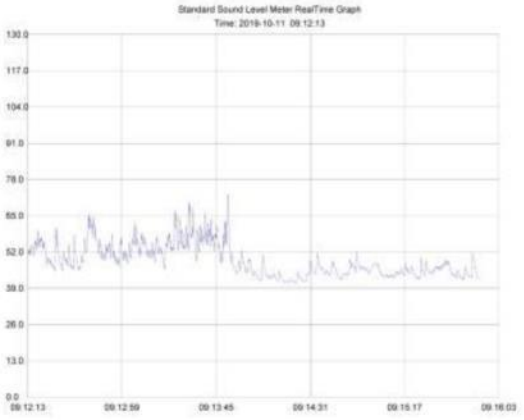
Start Time: 10-10-2019,09:22:02
Maxnum: 80.40 10-10-2019,09:24:58
Minnum: 39.70 10-10-2019,09:23:32
Sample Rate: 0.10
Average: 48.18

Start Time: 10-10-2019,14:10:55
Maxnum: 82.00 10-10-2019,14:11:28
Minnum: 39.90 10-10-2019,14:11:44
Sample Rate: 0.10
Average: 49.23

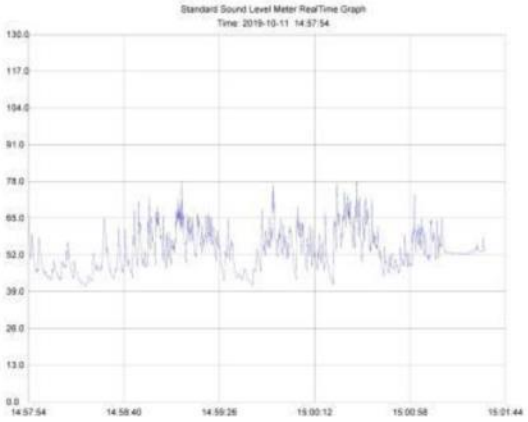


Start Time: 10-10-2019 18:52:04
Maximum: 76.70 10-10-2019 18:53:36
Minimum: 39.20 10-10-2019 18:54:55
Sample Rate: 0.10
Average: 48.57

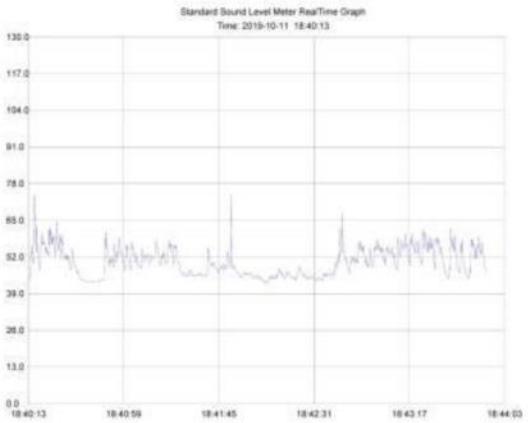
Day 5 (13.12.2019):



Start Time: 11-10-2019 09:12:13
Maximum: 72.80 11-10-2019 09:13:50
Minimum: 40.90 11-10-2019 09:14:24
Sample Rate: 0.10
Average: 48.57



Start Time: 11-10-2019.14:57:54
Maxmum: 77.70 11-10-2019.14:59:07
Minmum: 40.90 11-10-2019.14:58:26
Sample Rate: 0.10
Average: 53.51



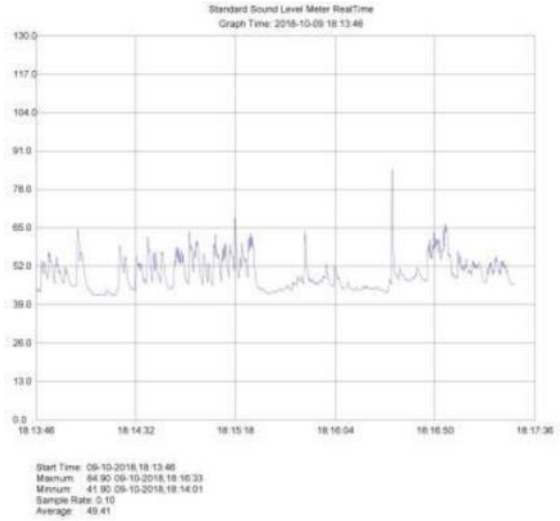
Start Time: 11-10-2019.18:40:13
Maxmum: 74.30 11-10-2019.18:40:16
Minmum: 42.70 11-10-2019.18:41:59
Sample Rate: 0.10
Average: 50.17

Test results for The Magnolia Hotel:

Day 1 (09.12.2019):

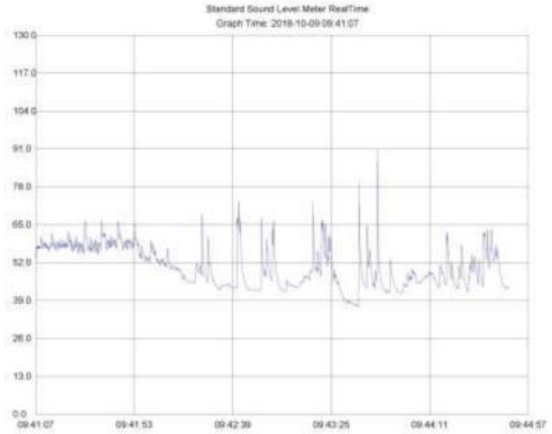
Start Time: 09-10-2018,09:11:18
Maximum: 78.00 09-10-2018,09:11:20
Minimum: 42.30 09-10-2018,09:12:40
Sample Rate: 0.10
Average: 49.95

Start Time: 09-10-2018,13:38:08
Maximum: 84.10 09-10-2018,13:39:55
Minimum: 42.60 09-10-2018,13:39:32
Sample Rate: 0.10
Average: 51.71

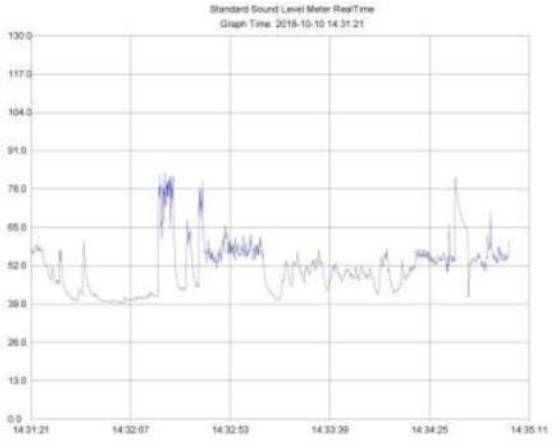


Start Time: 09-10-2018,18:13:46
Maximum: 84.90 09-10-2018,18:16:33
Minimum: 41.90 09-10-2018,18:14:01
Sample Rate: 0.10
Average: 49.41

Day 2 (10.12.2019):



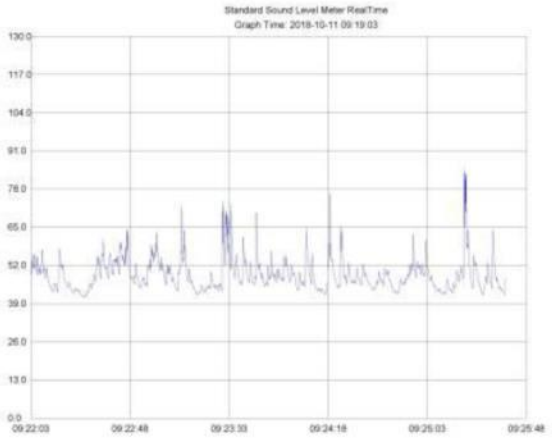
Start Time: 09-10-2018,09:41:07
Maximum: 90.70 09-10-2018,09:43:40
Minimum: 36.80 09-10-2018,09:43:31
Sample Rate: 0.10
Average: 50.37



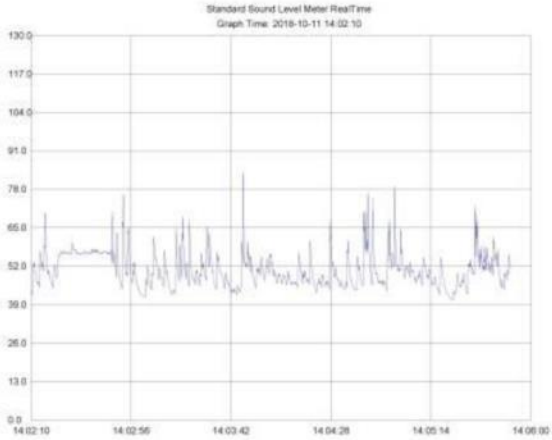
Start Time: 12-10-2018,14:31:21
Maxnum: 83.70 12-10-2018,14:32:19
Minnum: 39.40 12-10-2018,14:32:00
Sample Rate: 0.10
Average: 51.33

Start Time: 12-10-2018,18:22:19 Maxnum: 69.20 12-10-201818:25:45 Minnum: 42.10 12-10-2018,18:25:30 Sample Rate: 0.10
Average: 48.20

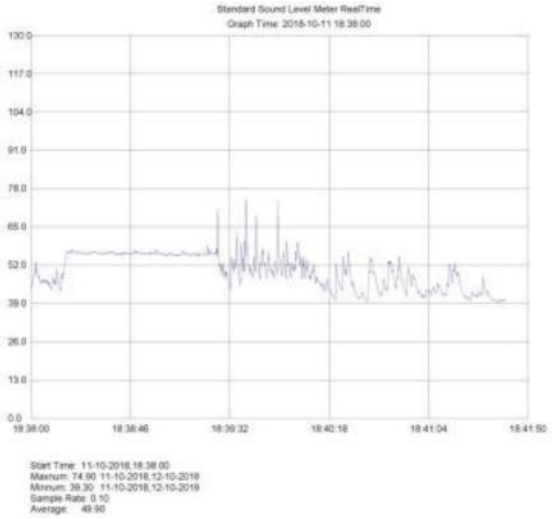
Day 3 (11.12.2019):



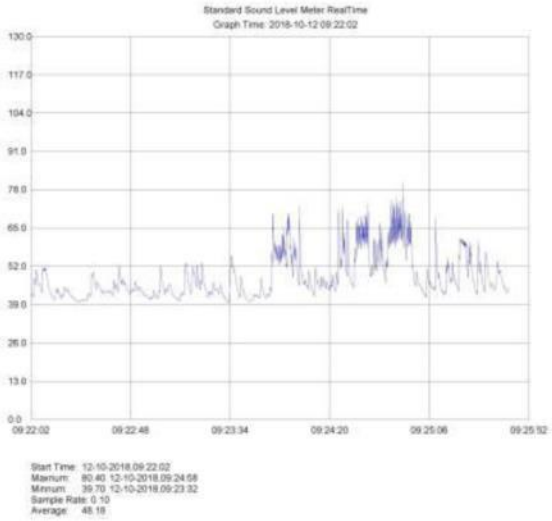
Start Time: 12-10-2018,09:22:03
Maxnum: 85.10 12-10-2018,09:25:23
Minnum: 41.20 12-10-2018,09:22:34
Sample Rate: 0.10
Average: 48.79

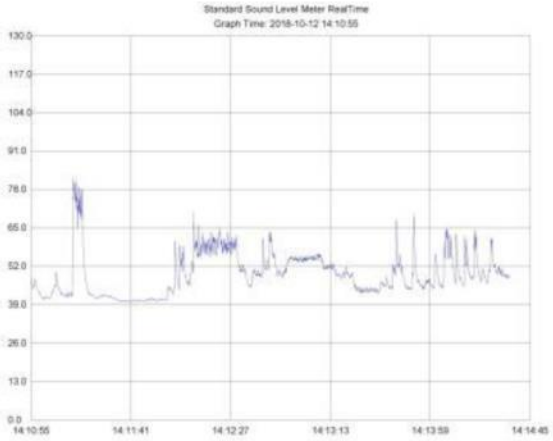


Start Time: 11-10-2018,14:28:10
Maxnum: 83.80 11-10-2018,14:03:49
Minnum: 40.60 11-10-2018,12-10-2018
Sample Rate: 0.10
Average: 50.67



Day 4 (12.12.2019):

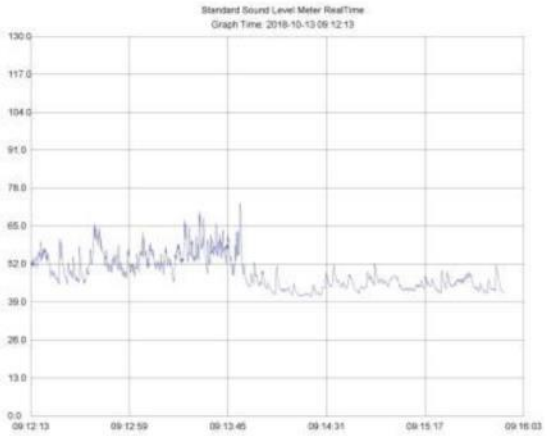




Start Time: 12-10-2018,14:10:55
Maximum: 82.00 12-10-2018,14:11:28
Minimum: 39.90 12-10-2018,14:11:44
Sample Rate: 0.10
Average: 49.23

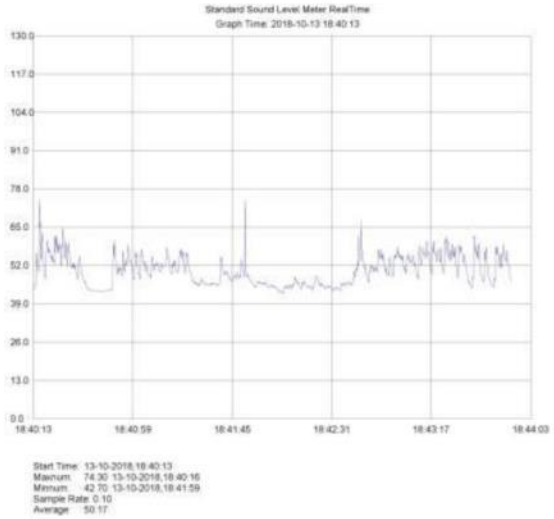
Start Time: 12-10-2018,18:52:04
Maximum: 76.70 12-10-2018,18:53:36
Minimum: 39.20 12-10-2018,18:54:55
Sample Rate: 0.10
Average: 48.57

Day 5 (13.12.2019):



Start Time: 13-10-2018,09:12:13
Maximum: 72.80 13-10-2018,09:13:50
Minimum: 40.90 13-10-2018,09:14:24
Sample Rate: 0.10
Average: 48.97

Start Time: 13-10-2018,14:57:54
Maximum: 77.70 13-10-2018,14:59:07
Minimum: 40.90 13-10-2018,14:58:26
Sample Rate: 0.10
Average: 53.51



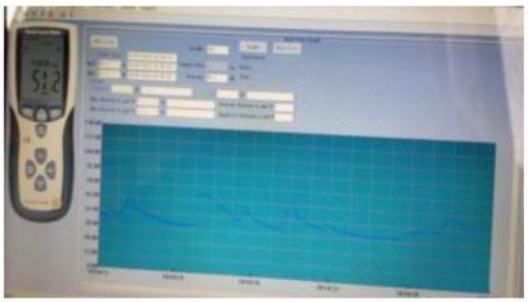
Meteorological Data (09.12.2019 - 13.12.2019) Batumi, Georgia

Weather History & Observations

2019	Temp. (°C)			Dew Point (°C)			Humidity (%)			Pressure (hPa)		Wind (km/h)			Precip. (mm)
Dec	high	avg	low	high	avg	low	high	avg	low	high	low	high	avg	low	sum
09	13.3	9.2	5.8	6.9	4.9	3.5	91	75	60	1,023.03	1,019.98	33.1	7.3	0.0	0.00
10	14.6	9.7	5.3	5.6	2.4	0.2	83	62	41	1,023.03	1,017.95	49.0	16.5	0.0	0.00
11	14.3	10.6	7.3	7.4	2.5	-1.2	83	58	42	1,022.01	1,019.64	52.2	18.7	0.0	0.00
12	15.7	10.0	7.1	2.2	0.5	-1.5	67	53	31	1,020.66	1,015.92	53.3	34.4	8.6	0.00
13	18.0	14.0	12.4	3.1	-0.1	-3.1	44	38	32	1,011.51	1,009.48	47.9	25.2	4.0	0.00


December 9, 2019 - December 15, 2019
Dec 09
Dec 10
Dec 11
Dec 12
Dec 13
Dec 14
Dec 15
Dec 16
Temperature (°C)
Dew Point (°)
Wind Speed (km/h)
Wind Gust (km/h)
Wind Direction
Precip. Accum. Total (mm)
Precip. Rate (mm)
Pressure (hPa)
Solar Radiation (watts/m²)
UV Index

Photo-Documentation:



Conclusion:

"Based on the results of the tests conducted in three locations (School Lyceum "Taoba", Shota Rustaveli University, The Magnolia Hotel), Monitoring noise levels are under the norm of Resolution No 398 of the Government of Georgia, August 15, 2017; Technical Regulations – „On the norms of acoustic noise in the premises of buildings and areas of the residential houses and social/public establishments".

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
Shota Rustaveli University	Day 1 09.12.2019	Morning	09:22	**49.70**	**52.34**	**50**
		Noon	14:38	**54.98**		
		Evening	17:08	**49.77**	**49.77**	**45**
	Day 2 10.12.2019	Morning	09:19	**49.78**	**50.17**	**50**
		Noon	14:11	**50.56**		
		Evening	17:31	**49.32**	**49.32**	**45**
	Day 3 11.12.2019	Morning	09:11	**49.49**	**50.58**	**50**
		Noon	14:37	**51.68**		
		Evening	17:03	**50.99**	**50.99**	**45**
	Day 4 12.12.2019	Morning	09:29	**50.06**	**49.62**	**50**
		Noon	14.22	**49.19**		
		Evening	17:52	**52.59**	**52.59**	**45**
	Day 5 13.12.2019	Morning	09:25	**50.29**	**50.51**	**50**
		Noon	14:18	**50.73**		
		Evening	17:11	**49.84**	**49.84**	**45**

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
The Magnolia Hotel	Day 1 09.12.2019	Morning	09:41	**49.95**	**50.83**	**50**
		Noon	13:38	**51.71**		
		Evening	18:13	**49.41**	**49.41**	**45**
	Day 2 10.12.2019	Morning	09:41	**50.37**	**50.85**	**50**
		Noon	14:31	**51.33**		
		Evening	18:22	**48.20**	**48.20**	**45**
	Day 3 11.12.2019	Morning	09:22	**48.79**	**49.73**	**50**
		Noon	14:02	**50.67**		
		Evening	18:38	**49.90**	**49.90**	**45**
	Day 4 12.12.2019	Morning	09:22	**48.18**	**48.70**	**50**
		Noon	14:10	**49.23**		
		Evening	18:52	**48.57**	**48.57**	**45**
	Day 5 13.12.2019	Morning	09:12	**48.97**	**51.24**	**50**
		Noon	14:57	**53.51**		
		Evening	18:40	**50.17**	**50.17**	**45**

Location	Days	Period of day	Time of taken sample	Monitoring result of daily mean (Average); dBA	Daily values (Arithmetical average) dBA	**Thresholds of daily mean by Georgian law** (Resolution No 398 of the Government of Georgia, August 15, 2017) - See Annex N1; Item #13; dBA
School-lyceum "Taoba"	Day 1 09.12.2019	Morning	09:11	**49.95**	**50.83**	**50**
		Noon	13:38	**51.71**		
		Evening	18:13	**49.41**	**49.41**	**45**
	Day 2 10.12.2019	Morning	09:41	**50.37**	**50.85**	**50**
		Noon	14:31	**51.33**		
		Evening	18:22	**48.20**	**48.20**	**45**
	Day 3 11.12.2019	Morning	09:19	**48.79**	**48.49**	**50**
		Noon	14.02	**50.67**		
		Evening	18:38	**49.90**	**49.90**	**45**
	Day 4 12.12.2019	Morning	09:22	**48.18**	**48.70**	**50**
		Noon	14:10	**49.23**		
		Evening	18:52	**48.57**	**48.57**	**45**
	Day 5 13.12.2019	Morning	09:12	**48.97**	**51.24**	**50**
		Noon	14:57	**53.51**		
		Evening	18:40	**50.17**	**50.17**	**45**

8.2 Annex 2 - Air Measurements (July - December 2019)

8.2.1 July

საქართველოს გარემოს დაცვისა და სოფლის მეურნეობის სამინისტრო
MINISTRY OF ENVIRONMENT PROTECTION AND AGRICULTURE OF GEORGIA

სსიპ გარემოს ეროვნული სააგენტო
LEPL NATIONAL ENVIRONMENTAL AGENCY

N 12/1-778 25 07 2019

შპს „სტრუიკ გრუპ ჯორჯია"-ს დირექტორს

ბ-ნ ედვარდ სტრუიკს

ბატონო ედვარდ,

საქართველოს გარემოსა და ბუნებრივი რესურსების დაცვის სამინისტროს ს.ს.ი.პ „გარემოს ეროვნულ სააგენტო"-სა და შპს „სტრუიკ გრუპ ჯორჯია"-ს შორის 2018 წლის 08 იანვარს გაფორმებული ფასიანი მომსახურების შესახებ №ფმ-3/11 ხელშეკრულების შესაბამისად, დანართის სახით (ქართულ და ინგლისურ ენაზე) გაწვდით, ქ. ბათუმში, სანაპირო ზოლის გასწვრივ, თქვენს მიერ მითითებული ატმოსფერული ჰაერის 3 (ერთი) წერტილში 2019 წლის **ივლისის თვეში** ჩატარებული გაზომვების შედეგებს.

დანართი: 2 გვ.

პატივისცემით,

სააგენტოს უფროსი **ანდრო ასლანიშვილი**

დ. აღმაშენებლის გამ. 150, 0112, თბილისი, საქართველო
150 D. AGMASHENEBELI AVE., 0112, TBILISI, GEORGIA
Tel.: +995 32 2439503 Fax: +995 32 2439502
E-mail: info@nea.gov.ge Web: www.nea.gov.ge

ატმოსფერულ ჰაერში დამაბინძურებელი ინგრედიენტების გაზომვის შედეგები

ქალაქ ბათუმში

24.07.2019

ხელშეკრულება N მფ-3/11

N	გაზომვის ჩატარების ადგილი	კოორდინატები	გაზომვის შედეგები			
			CO ნახშირჟანგი მგ/მ³	NO_2 აზოტის დიოქსიდი მგ/მ³	SO_2 გოგირდის დიოქსიდი მგ/მ³	მტვერი მგ/მ³
1	შოთა რუსთაველის ქუჩა	718722/4614281	2.17	0,011	<0,247	0,047
2	სასტუმრო „მაგნოლია“	71788/4613579	1,32	0,008	<0,247	0,03
3	სკოლა ლიცეუმი-თაობა	715840/4611035	1,83	0,009	<0,247	0,062
4	ზღვრულად დასაშვები კონცენტრაციები (ზდკ)		5,0	0,2	0,5	0,5

გაზომვები ჩატარდა შემდეგი ხელსაწყოების გამოყენებით: გოგირდის დიოქსიდი - GasAlertMicro 5; მტვერი - CASELLA CEL-712 Microdust Pro; ნარხშირჟანგი და აზოტის დიოქსიდი - ЭЛАН;

შემსრულებლები:

მთავარი სპეციალისტი ომარ ყენია

წამყვანი სპეციალისტი გიგლა მორგოშია

შეთანხმებულია:

გარემოს დაბინძურების მონიტორინგის

დეპარტამენტის უფროსი მარინე არაბიძე

The results of measuring pollutant ingredients in atmospheric air in the city of Batumi

24.05.2019

Agreement – N nf -3/11

N	Measurement Area	Coordinates	Measurement Result			
			CO Carbon oxide mg/m³	**NO_2** Nitrogen dioxide mg/m³	**SO_2** Sulfur dioxide mg/m³	Dust mg/m³
1	Shota Rustaveli street	718722/4614281	2.17	0,011	<0,247	0,047
2	Hotel Magnolia	71788/4613579	1,32	0,008	<0,247	0,03
3	Private school -"Taoba"	715840/4611035	1,83	0,009	<0,247	0,062
4	Maximum permissible concentrations (MPC)		5,0	0,2	0,5	0,5

Measurements were carried out using the following tools: Sulfur dioxide - GASALERTMICRO 5; Dust - CASELLA CEL-712 Microdust Pro;

Carbon oxide and nitrogen dioxide - ЭЛАН;

Measurements were conducted:

Leading specialist Gigla Morgoshia

Main specialist Omar Kenia

Agreed:

Head of department Marine Arabidze

8.2.2 August

საქართველოს გარემოს დაცვისა და სოფლის მეურნეობის სამინისტრო
MINISTRY OF ENVIRONMENT PROTECTION AND AGRICULTURE OF GEORGIA

სსიპ გარემოს ეროვნული სააგენტო
LEPL NATIONAL ENVIRONMENTAL AGENCY

N 12/1-875 19 08 2019

შპს „სტრუიკ გრუპ ჯორჯია“-ს დირექტორს

ბ-ნ ედვარდ სტრუიკს

ბატონო ედვარდ,

საქართველოს გარემოსა და ბუნებრივი რესურსების დაცვის სამინისტროს ს.ს.ი.პ „გარემოს ეროვნულ სააგენტო“-სა და შპს „სტრუიკ გრუპ ჯორჯია“-ს შორის 2018 წლის 08 იანვარს გაფორმებული ფასიანი მომსახურების შესახებ №ფმ-3/11 ხელშეკრულების შესაბამისად, დანართის სახით (ქართულ და ინგლისურ ენაზე) გაწვდით, ქ. ბათუმში, სანაპირო ზოლის გასწვრივ, თქვენს მიერ მითითებული ატმოსფერული ჰაერის 3 (სამი) წერტილში 2019 წლის **აგვისტოს თვეში** ჩატარებული გაზომვების შედეგებს.

დანართი: 2 გვ.

პატივისცემით,

სააგენტოს უფროსი **ანდრო ასლანიშვილი**

დ. აღმაშენებლის გამ. 150, 0112, თბილისი, საქართველო Tel.: +995 32 2439503 Fax: +995 32 2439502

ატმოსფერულ ჰაერში დამაბინძურებელი ინგრედიენტების გაზომვის შედეგები

ქალაქ ბათუმში

14.08.2019 ხელმეკრულება N მფ-3/11

N	გაზომვის ჩატარების ადგილი	კოორდინატები	გაზომვის შედეგები			
			CO ნახშირჟანგი მგ/მ³	NO_2 აზოტის დიოქსიდი მგ/მ³	SO_2 გოგირდის დიოქსიდი მგ/მ³	მტვერი მგ/მ³
1	შოთა რუსთაველი ქუჩა	718722/4614281	1,19	0,008	<0,247	0,042
2	სასტუმრო მაგნოლია	71788/4613579	1,58	0,006	<0,247	0,051
3	სკოლა ლიცეუმი-თაობა	715840/4611035	1,09	0,002	<0,247	0,023
4	ზღვრულად დასაშვები კონცენტრაციები (ზდკ)		5,0	0,2	0,5	0,5

გაზომვები ჩატარდა შემდეგი ხელსაწყოების გამოყენებით: გოგირდის დიოქსიდი - GasAlertMicro 5; მტვერი - CASELLA CEL-712 Microdust Pro; ნარხშირჟანგი და აზოტის დიოქსიდი - ЭЛАН;

შემსურლებლები:

სამმართველოს უფროსი გიორგი კარგარეთელი

შეთანხმებულია:

გარემოს დაბინძურების მონიტორინგის

დეპარტამენტის უფროსი მარინე არაბიძე

The results of measuring pollutant ingredients in atmospheric air in the city of Batumi

14.08.2019

Agreement – N nf -3/11

N	Measurement Area	Coordinates	Measurement Result			
			CO Carbon oxide mg/m³	**NO_2** Nitrogen dioxide mg/m³	**SO_2** Sulfur dioxide mg/m³	Dust mg/m³
1	Shota Rustaveli street	718722/4614281	1,19	0,008	<0,247	0,042
2	Hotel Magnolia	71788/4613579	1,58	0,006	<0,247	0,051
3	Private school -"Taoba"	715840/4611035	1,09	0,002	<0,247	0,023
4	Maximum permissible concentrations (MPC)		5,0	0,2	0,5	0,5

Measurements were carried out using the following tools: Sulfur dioxide - GASALERTMICRO 5; Dust - CASELLA CEL-712 Microdust Pro; Carbon Poxide and Nitrogen dioxide - ЭЛАН;

Measurements were conducted:

Head of the division Giorgi Kargareteli

Agreed:

Head of department Marine Arabidze

8.2.3 September

საქართველოს გარემოს დაცვისა და სოფლის მეურნეობის სამინისტრო
MINISTRY OF ENVIRONMENT PROTECTION AND AGRICULTURE OF GEORGIA

სსიპ გარემოს ეროვნული სააგენტო
LEPL NATIONAL ENVIRONMENTAL AGENCY

N 12/1-998 25 09 2018წ.

შპს „სტრუიკ გრუპ ჯორჯია"-ს დირექტორს

ბ-ნ ედვარდ სტრუიკს

ბატონო ედვარდ,

საქართველოს გარემოსა და ბუნებრივი რესურსების დაცვის სამინისტროს ს.ს.ი.პ „გარემოს ეროვნულ სააგენტო"-სა და შპს „სტრუიკ გრუპ ჯორჯია"-ს შორის 2018 წლის 08 იანვარს გაფორმებული ფასიანი მომსახურების შესახებ №ფმ-3/11 ხელშეკრულების შესაბამისად, დანართის სახით (ქართულ და ინგლისურ ენაზე) გაწვდით, ქ. ბათუმში, სანაპირო ზოლის გასწვრივ, თქვენს მიერ მითითებული ატმოსფერული ჰაერის 3 (სამი) წერტილში 2019 წლის **სექტემბრის თვეში** ჩატარებული გაზომვების შედეგებს.

დანართი: 2 გვ.

პატივისცემით,

სააგენტოს უფროსი **ანდრო ასლანიშვილი**

დ. აღმაშენებლის გამ. 150, 0112, თბილისი, საქართველო
150 D. AGMASHENEBELI AVE., 0112, TBILISI, GEORGIA
Tel.: +995 32 2439503 Fax: +995 32 2439502
E-mail: info@nea.gov.ge Web: www.nea.gov.ge

ატმოსფერულ ჰაერში დამაბინძურებელი ინგრედიენტების გაზომვის შედეგები

ქალაქ ბათუმში

18.09.2019 ხელშეკრულება N მფ-3/11

N	გაზომვის ჩატარების ადგილი	კოორდინატები	გაზომვის შედეგები			
			CO ნახშირჟანგი მგ/მ³	NO_2 აზოტის დიოქსიდი მგ/მ³	SO_2 გოგირდის დიოქსიდი მგ/მ³	მტვერი მგ/მ³
1	შოთა რუსთაველი ქუჩა	718722/4614281	1,28	0,007	<0,247	0,045
2	სასტუმრო მაგნოლია	71788/4613579	1,47	0,008	<0,247	0,049
3	სკოლა ლიცეუმი-თაობა	715840/4611035	0,98	0,001	<0,247	0,021
4	ზღვრულად დასაშვები კონცენტრაციები (ზდკ)		5,0	0,2	0,5	0,5

გაზომვები ჩატარდა შემდეგი ხელსაწყოების გამოყენებით: გოგირდის დიოქსიდი - GASALERTMICRO 5; მტვერი - CASELLA CEL-712 Microdust Pro; ნარხშირჟანგი და აზოტის დიოქსიდი - ЭЛАН;

შემსურლებლები:

მთავარი სპეციალისტი სერგო ხაცავა

წამყვანი სპეციალისტი გიგლა მორგოშია

შეთანხმებულია:

გარემოს დაბინძურების მონიტორინგის

დეპარტამენტის უფროსი მარინე არაბიძე

The results of measuring pollutant ingredients in atmospheric air in the city of Batumi

18.09.2019 Agreement – N nf -3/11

N	Measurement Area	Coordinates	Measurement Result			
			CO Carbon oxide mg/m³	NO_2 Nitrogen dioxide mg/m³	SO_2 Sulfur dioxide mg/m³	Dust mg/m³
1	Shota Rustaveli street	718722/4614281	1,28	0,007	<0,247	0,045
2	Hotel Magnolia	71788/4613579	1,47	0,008	<0,247	0,049
3	Private school -"Taoba"	715840/4611035	0,98	0,001	<0,247	0,021
4	Maximum permissible concentrations (MPC)		5,0	0,2	0,5	0,5

Measurements were carried out using the following tools: Sulfur dioxide - GASALERTMICRO 5; Dust - CASELLA CEL-712 Microdust Pro; Carbon Poxide and Nitrogen dioxide - ЭЛАН;

Measurements were conducted:

Main specialist Sergo khacava

Leading Specialist Gigla Morgoshia

Agreed:

Head of department Marine Arabidze

8.2.4 October

საქართველოს გარემოს დაცვისა და სოფლის მეურნეობის სამინისტრო
MINISTRY OF ENVIRONMENT PROTECTION AND AGRICULTURE OF GEORGIA

სსიპ გარემოს ეროვნული სააგენტო
LEPL NATIONAL ENVIRONMENTAL AGENCY

N 12/1-1087 22 10 2019 წ.

შპს „სტრუიკ გრუპ ჯორჯია"-ს დირექტორს
ბ-ნ ედვარდ სტრუიკს

ბატონო ედვარდ,

საქართველოს გარემოსა და ბუნებრივი რესურსების დაცვის სამინისტროს ს.ს.ი.პ „გარემოს ეროვნულ სააგენტო"-სა და შპს „სტრუიკ გრუპ ჯორჯია"-ს შორის 2018 წლის 08 იანვარს გაფორმებული ფასიანი მომსახურების შესახებ №ფმ-3/11 ხელშეკრულების შესაბამისად, დანართის სახით (ქართულ და ინგლისურ ენაზე) გაწვდით, ქ. ბათუმში, სანაპირო ზოლის გასწვრივ, თქვენს მიერ მითითებული ატმოსფერული ჰაერის 3 (სამი) წერტილში 2019 წლის **ოქტომბრის თვეში** ჩატარებული გაზომვების შედეგებს.

დანართი: 2 გვ.

პატივისცემით,

სააგენტოს უფროსი **ანდრო ასლანიშვილი**

დ. აღმაშენებლის გამ. 150, 0112, თბილისი, საქართველო
150 D. AGMASHENEBELI AVE., 0112, TBILISI, GEORGIA
Tel.: +995 32 2439503 Fax: +995 32 2439502
E-mail: info@nea.gov.ge Web: www.nea.gov.ge

ატმოსფერულ ჰაერში დამაბინძურებელი ინგრედიენტების გაზომვის შედეგები

ქალაქ ბათუმში

09.10.2019 ხელშეკრულება N მფ-3/11

N	გაზომვის ჩატარების ადგილი	კოორდინატები	გაზომვის შედეგები			
			CO ნახშირჟანგი მგ/მ³	NO_2 აზოტის დიოქსიდი მგ/მ³	SO_2 გოგირდის დიოქსიდი მგ/მ³	მტვერი მგ/მ³
1	შოთა რუსთაველი ქუჩა	718722/4614281	1,25	0,006	<0,247	0,047
2	სასტუმრო მაგნოლია	71788/4613579	1,41	0,008	<0,247	0,046
3	სკოლა ლიცეუმი-თაობა	715840/4611035	0,99	0,002	<0,247	0,019
4	ზღვრულად დასაშვები კონცენტრაციები (ზდკ)		5,0	0,2	0,5	0,5

გაზომვები ჩატარდა შემდეგი ხელსაწყოების გამოყენებით: გოგირდის დიოქსიდი - GASALERTMICRO 5; მტვერი - CASELLA CEL-712 Microdust Pro; ნარხშირჟანგი და აზოტის დიოქსიდი - ЭЛАН;

შემსურლებლები:

მთავარი სპეციალისტი ომარ ყენია

წამყვანი სპეციალისტი გიგლა მორგოშია

შეთანხმებულია:

გარემოს დაბინძურების მონიტორინგის

დეპარტამენტის უფროსი მარინე არაბიძე

The results of measuring pollutant ingredients in atmospheric air in the city of Batumi

09.10.2019

Agreement – N nf -3/11

N	Measurement Area	Coordinates	Measurement Result			
			CO Carbon oxide mg/m³	**NO_2** Nitrogen dioxide mg/m³	**SO_2** Sulfur dioxide mg/m³	Dust mg/m³
1	Shota Rustaveli street	718722/4614281	1,25	0,006	<0,247	0,047
2	Hotel Magnolia	71788/4613579	1,41	0,008	<0,247	0,046
3	Private school -"Taoba"	715840/4611035	0,99	0,002	<0,247	0,019
4	Maximum permissible concentrations (MPC)		5,0	0,2	0,5	0,5

Measurements were carried out using the following tools: Sulfur dioxide - GASALERTMICRO 5; Dust - CASELLA CEL-712 Microdust Pro; Carbon Poxide and Nitrogen dioxide - ЭЛАН;

Measurements were conducted:

Main specialist — Omar Yenia

Leading Specialist — Gigla Morgoshia

Agreed:

Head of department — Marine Arabidze

8.2.5 November

საქართველოს გარემოს დაცვისა და სოფლის მეურნეობის სამინისტრო
MINISTRY OF ENVIRONMENT PROTECTION AND AGRICULTURE OF GEORGIA

სსიპ გარემოს ეროვნული სააგენტო
LEPL NATIONAL ENVIRONMENTAL AGENCY

N 12/1-1161 27 11 2019 წ.

შპს „სტრუიკ გრუპ ჯორჯია“-ს დირექტორს
ბ-ნ ედვარდ სტრუიკს

ბატონო ედვარდ,

საქართველოს გარემოსა და ბუნებრივი რესურსების დაცვის სამინისტროს ს.ს.ი.პ „გარემოს ეროვნულ სააგენტო“-სა და შპს „სტრუიკ გრუპ ჯორჯია“-ს შორის 2018 წლის 08 იანვარს გაფორმებული ფასიანი მომსახურების შესახებ №ფმ-3/11 ხელშეკრულების შესაბამისად, დანართის სახით (ქართულ და ინგლისურ ენაზე) გაწვდით, ქ. ბათუმში, სანაპირო ზოლის გასწვრივ, თქვენს მიერ მითითებული ატმოსფერული ჰაერის 3 (სამი) წერტილში 2019 წლის **ნოემბრის თვეში** ჩატარებული გაზომვების შედეგებს.

დანართი: 2 გვ.

პატივისცემით,

სააგენტოს უფროსი ანდრო ასლანიშვილი

დ. აღმაშენებლის გამ. 150, 0112, თბილისი, საქართველო
150 D. AGMASHENEBELI AVE., 0112, TBILISI, GEORGIA
Tel.: +995 32 2439503 Fax: +995 32 2439502
E-mail: info@nea.gov.ge Web: www.nea.gov.ge

ატმოსფერულ ჰაერში დამაბინძურებელი ინგრედიენტების გაზომვის შედეგები

ქალაქ ბათუმში

17.11.2019 ხელშეკრულება N მფ-3/11

N	გაზომვის ჩატარების ადგილი	კოორდინატები	გაზომვის შედეგები			
			CO ნახშირჟანგი მგ/მ³	NO_2 აზოტის დიოქსიდი მგ/მ³	SO_2 გოგირდის დიოქსიდი მგ/მ³	მტვერი მგ/მ³
1	შოთა რუსთაველი ქუჩა	718722/4614281	1,59	0,008	<0,247	0,089
2	სასტუმრო მაგნოლია	71788/4613579	2,63	0,012	<0,247	0,062
3	სკოლა ლიცეუმი-თაობა	715840/4611035	1,41	0,009	<0,247	0,071
4	ზღვრულად დასაშვები კონცენტრაციები (ზდკ)		5,0	0,2	0,5	0,5

გაზომვები ჩატარდა შემდეგი ხელსაწყოების გამოყენებით: გოგირდის დიოქსიდი - GASALERTMICRO 5; მტვერი - CASELLA CEL-712 Microdust Pro; ნარხშირჟანგი და აზოტის დიოქსიდი - ЭЛАН;

შემსურლებლები:

წამყვანი სპეციალისტი გიორგი ხაჩიშვილი

შეთანხმებულია:

გარემოს დაბინძურების მონიტორინგის

დეპარტამენტის უფროსი მარინე არაბიძე

The results of measuring pollutant ingredients in atmospheric air in the city of Batumi

17.11.2019

Agreement – N nf -3/11

N	Measurement Area	Coordinates	Measurement Result			
			CO Carbon oxide mg/m³	**NO_2** Nitrogen dioxide mg/m³	**SO_2** Sulfur dioxide mg/m³	Dust mg/m³
1	Shota Rustaveli street	718722/4614281	1,59	0,008	<0,247	0,089
2	Hotel Magnolia	71788/4613579	2,63	0,012	<0,247	0,062
3	Private school -"Taoba"	715840/4611035	1,41	0,009	<0,247	0,071
4	Maximum permissible concentrations (MPC)		5,0	0,2	0,5	0,5

Measurements were carried out using the following tools: Sulfur dioxide - GASALERTMICRO 5; Dust - CASELLA CEL-712 Microdust Pro;

Carbon oxide and nitrogen dioxide - ЭЛИАН;

Measurements were conducted:

Leading Specialist — Giorgi khachishvili

Agreed:

Head of department — Marine Arabidze

8.2.6 December

საქართველოს გარემოს დაცვისა და სოფლის მეურნეობის სამინისტრო
MINISTRY OF ENVIRONMENT PROTECTION AND AGRICULTURE OF GEORGIA

სსიპ გარემოს ეროვნული სააგენტო
LEPL NATIONAL ENVIRONMENTAL AGENCY

N 12/1-1224 16 12 2019

შპს „სტრუიკ გრუპ ჯორჯია"-ს დირექტორს
ბ-ნ ედვარდ სტრუიკს

ბატონო ედვარდ,

საქართველოს გარემოსა და ბუნებრივი რესურსების დაცვის სამინისტროს ს.ს.ი.პ „გარემოს ეროვნულ სააგენტო"-სა და შპს „სტრუიკ გრუპ ჯორჯია"-ს შორის 2018 წლის 08 იანვარს გაფორმებული ფასიანი მომსახურების შესახებ №ფმ-3/11 ხელშეკრულების შესაბამისად, დანართის სახით (ქართულ და ინგლისურ ენაზე) გაწვდით, ქ. ბათუმში, სანაპირო ზოლის გასწვრივ, თქვენს მიერ მითითებული ატმოსფერული ჰაერის 3 (სამი) წერტილში 2019 წლის **დეკემბრის თვეში** ჩატარებული გაზომვების შედეგებს.

დანართი: 2 ვვ.

პატივისცემით,

სააგენტოს უფროსი **ანდრო ასლანიშვილი**

დ. აღმაშენებლის ბაზ. 150, 0112, თბილისი, საქართველო
150 D. AGMASHENEBELI AVE., 0112, TBILISI, GEORGIA
Tel.: +995 32 2439503 Fax: +995 32 2439502
E-mail: info@nea.gov.ge Web: www.nea.gov.ge

ატმოსფერულ ჰაერში დამაბინძურებელი ინგრედიენტების გაზომვის შედეგები

ქალაქ ბათუმში

07.12.2019

ხელშეკრულება N მფ-3/11

N	გაზომვის ჩატარების ადგილი	კოორდინატები	გაზომვის შედეგები			
			CO ნახშირჟანგი მგ/მ³	NO_2 აზოტის დიოქსიდი მგ/მ³	SO_2 გოგირდის დიოქსიდი მგ/მ³	მტვერი მგ/მ³
1	შოთა რუსთაველი ქუჩა	718722/4614281	1,71	0,007	<0,247	0,092
2	სასტუმრო მაგნოლია	717880/4613579	2,69	0,011	<0,247	0,067
3	სკოლა ლიცეუმი-თაობა	715840/4611035	1,47	0,008	<0,247	0,068
4	ზღვრულად დასაშვები კონცენტრაციები (ზდკ)		5,0	0,2	0,5	0,5

გაზომვები ჩატარდა შემდეგი ხელსაწყოების გამოყენებით: გოგირდის დიოქსიდი - GasAlertMicro 5; მტვერი - CASELLA CEL-712 Microdust Pro; ნარხშირჟანგი და აზოტის დიოქსიდი - ЭЛАН;

შემსურლებლები:

სამმართველოს უფროსი გიორგი კარგარეთელი

მთავარი სპეციალისტი სერგო ხაცავა

შეთანხმებულია:

გარემოს დაბინძურების მონიტორინგის დეპარტამენტის უფროსი მარინე არაბიძე

The results of measuring pollutant ingredients in atmospheric air in the city of Batumi

07.12.2019

Agreement – N nf -3/11

N	Measurement Area	Coordinates	Measurement Result			
			CO Carbon oxide mg/m³	**NO_2** Nitrogen dioxide mg/m³	**SO_2** Sulfur dioxide mg/m³	Dust mg/m³
1	Shota Rustaveli street	718722/4614281	1,71	0,007	<0,247	0,092
2	Hotel Magnolia	717880/4613579	2,69	0,011	<0,247	0,067
3	Private school -"Taoba"	715840/4611035	1,47	0,008	<0,247	0,068
4	Maximum permissible concentrations (MPC)		5,0	0,2	0,5	0,5

Measurements were carried out using the following tools: Sulfur dioxide - GASALERTMICRO 5; Dust - CASELLA CEL-712 Microdust Pro;

Carbon oxide and nitrogen dioxide - ЭЛАН;

Measurements were conducted:

Head of vision — Giorgi kargareeli

Main Specialist — Sergo khatsava

Agreed:

Head of department — Marine Arabidze

8.3 Annex 3 – Water turbidity Measurements (July - December, 2019)

8.3.1 July

Water Turbidity Test Report

(Monitoring)

Sample taking date: 2019/07/09	**Project: Coastal Protection Batumi**	**Location :**	**GPS 1: (X= 716496; Y= 4611935)**
			GPS 2: (X=716474; Y= 4611969)

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted water turbidity measurements in order to identify and quantify water turbidity level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - water turbidity levels; the samples have been taken at two location GPS 1: (X= 716496; Y= 4611935) & GPS 2: (X=716474; Y= 4611969).

Device Name: **TSS Portable handheld measurement instrument for turbidity/solids.**

Water turbidity standards: In accordance with the UKTAG proposed standard for suspended solids, August 2007

UKTAG proposed standard

	Min	Max
Water Turbidity (weighted particles) mg/l	25 mg/l 100 mg/l 200 mg/l 400 mg/l	100 mg/l low risk 200 mg/l moderate risk 400 mg/l high risk 400 < mg/l unacceptable risk

Map with samples points:

N1	Location	Measured Parameters	Unit	Results	Method
1	GPS 1: (X= 716496; Y= 4611935)	Suspended Solids	mg/L	34.21	Photometric

N1	Location	Measured Parameters	Unit	Results	Method
2	GPS 2: (X=716474; Y= 4611969)	Suspended Solids	mg/L	32.19	Photometric

Conclusion:

Based on the results of the tests conducted in two places GPS 1: (X= 716496; Y= 4611935) & GPS 2: (X=716474; Y= 4611969), Monitoring water turbidity level are under the norm of UKTAG standard.

Photos:




8.3.2 August

Water Turbidity Test Report

(Monitoring)

Sample taking date: 2019/08/12	**Project: Coastal Protection Batumi**	**Location :**	**GPS 1: (X= 716501; Y= 4611945)**
			GPS 2: (X=716479; Y= 4611957)

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted water turbidity measurements in order to identify and quantify water turbidity level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - water turbidity levels; the samples have been taken at two location GPS 1: (X= 716501; Y= 4611945) & GPS 2: (X=716479; Y= 4611957).

Device Name: **TSS Portable handheld measurement instrument for turbidity/solids.**

Water turbidity standards: In accordance with the UKTAG proposed standard for suspended solids, August 2007

UKTAG proposed standard

	Min	Max
Water Turbidity (weighted particles) mg/l	25 mg/l 100 mg/l 200 mg/l 400 mg/l	100 mg/l low risk 200 mg/l moderate risk 400 mg/l high risk 400 < mg/l unacceptable risk

Map with samples points:

N1	Location	Measured Parameters	Unit	Results	Method
1	GPS 1: (X= 716501; Y= 4611945)	Suspended Solids	mg/L	40.58	Photometric

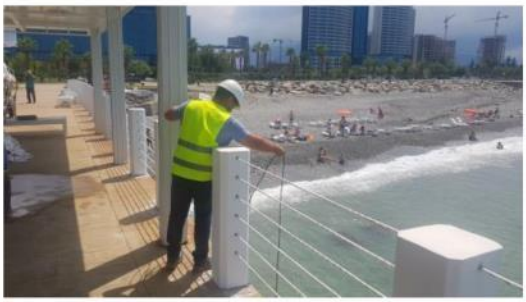
N1	Location	Measured Parameters	Unit	Results	Method
2	GPS 2: (X=716479; Y= 4611957)	Suspended Solids	mg/L	37.23	Photometric

Conclusion:

Based on the results of the tests conducted in two places GPS 1: (X= 716501; Y= 4611945) & GPS 2: (X=716479; Y= 4611957), Monitoring water turbidity level are under the norm of UKTAG standard.

Photos:






8.3.3 September

Water Turbidity Test Report

(Monitoring)

Sample taking date: 2019/09/02	**Project: Coastal Protection Batumi**	**Location :**	**GPS 1: (X= 716475; Y= 4611964)**
			GPS 2: (X=716499; Y= 4611930)

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted water turbidity measurements in order to identify and quantify water turbidity level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - water turbidity levels; the samples have been taken at two location GPS 1: (X= 716475; Y= 4611964) & GPS 2: (X=716499; Y= 4611930).

Device Name: **TSS Portable handheld measurement instrument for turbidity/solids.**

Water turbidity standards: In accordance with the UKTAG proposed standard for suspended solids, August 2007

UKTAG proposed standard

	Min	Max
Water Turbidity (weighted particles) mg/l	25 mg/l 100 mg/l 200 mg/l 400 mg/l	100 mg/l low risk 200 mg/l moderate risk 400 mg/l high risk 400 < mg/l unacceptable risk

Map with samples points:

N1	Location	Measured Parameters	Unit	Results	Method
1	GPS 1: (X= 716475; Y= 4611964)	Suspended Solids	mg/L	32.29	Photometric

N1	Location	Measured Parameters	Unit	Results	Method
2	GPS 2: (X=716499; Y= 4611930)	Suspended Solids	mg/L	37.15	Photometric

Conclusion:

Based on the results of the tests conducted in two places GPS 1: (X= 716475; Y= 4611964) & GPS 2: (X=716499; Y= 4611930), Monitoring water turbidity level are under the norm of UKTAG standard.

Photos:

8.3.4 October

Water Turbidity Test Report

(Monitoring)

Sample taking date: 2019/10/07	**Project: Coastal Protection Batumi**	**Location :**	**GPS 1: (X= 716494; Y= 4611938)**
			GPS 2: (X=716473; Y= 4611969)

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted water turbidity measurements in order to identify and quantify water turbidity level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - water turbidity levels; the samples have been taken at two location GPS 1: (X= 716494; Y= 4611938) & GPS 2: (X=716473; Y= 4611969).

Device Name: **TSS Portable handheld measurement instrument for turbidity/solids.**

Water turbidity standards: In accordance with the UKTAG proposed standard for suspended solids, August 2007

UKTAG proposed standard

	Min	Max
Water Turbidity (weighted particles) mg/l	25 mg/l 100 mg/l 200 mg/l 400 mg/l	100 mg/l low risk 200 mg/l moderate risk 400 mg/l high risk 400 < mg/l unacceptable risk

Map with samples points:

N1	Location	Measured Parameters	Unit	Results	Method
1	GPS 1: (X= 716494; Y= 4611938)	Suspended Solids	mg/L	47.08	Photometric

N1	Location	Measured Parameters	Unit	Results	Method
2	GPS 2: (X=716473; Y= 4611969)	Suspended Solids	mg/L	52.42	Photometric

Conclusion:

Based on the results of the tests conducted in two places GPS 1: (X= 716494; Y= 4611938) & GPS 2: (X=716473; Y= 4611969), Monitoring water turbidity level are under the norm of UKTAG standard.

Photos:




8.3.5 November

Water Turbidity Test Report

(Monitoring)

Sample taking date: 2019/11/12	**Project: Coastal Protection Batumi**	**Location :**	**GPS 1: (X= 716488; Y= 4611945)**
			GPS 2: (X=716487; Y= 4611961)

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted water turbidity measurements in order to identify and quantify water turbidity level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - water turbidity levels; the samples have been taken at two location GPS 1: (X= 716488; Y= 4611945) & GPS 2: (X=716487; Y= 4611961).

Device Name: **TSS Portable handheld measurement instrument for turbidity/solids.**

Water turbidity standards: In accordance with the UKTAG proposed standard for suspended solids, August 2007

UKTAG proposed standard

	Min	Max
Water Turbidity (weighted particles) mg/l	25 mg/l 100 mg/l 200 mg/l 400 mg/l	100 mg/l low risk 200 mg/l moderate risk 400 mg/l high risk 400 < mg/l unacceptable risk

Map with samples points:

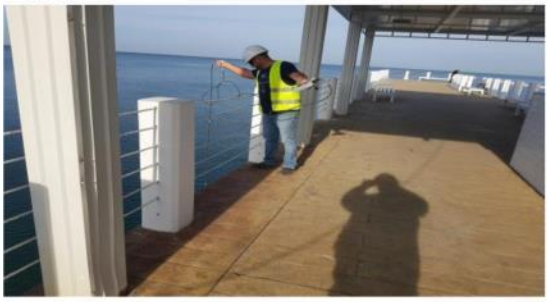
N1	Location	Measured Parameters	Unit	Results	Method
1	GPS 1: (X= 716488; Y= 4611945)	Suspended Solids	mg/L	31.89	Photometric

N1	Location	Measured Parameters	Unit	Results	Method
2	GPS 2: (X=716487; Y= 4611961)	Suspended Solids	mg/L	27.08	Photometric

Conclusion:

Based on the results of the tests conducted in two places GPS 1: (X= 716488; Y= 4611945) & GPS 2: (X=716487; Y= 4611961), Monitoring water turbidity level are under the norm of UKTAG standard.

Photos:




8.3.6 December

Water Turbidity Test Report

(Monitoring)

Sample taking date: 2019/12/09	**Project: Coastal Protection Batumi**	**Location :**	**GPS 1: (X= 716499; Y= 4611932)**
			GPS 2: (X=716477; Y= 4611972)

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted water turbidity measurements in order to identify and quantify water turbidity level of workplace for community.

General description

Contractor Environmental Manager Mamuka Shaorshadze visited site and took measures - water turbidity levels; the samples have been taken at two location GPS 1: (X= 716499; Y= 4611932) & GPS 2: (X=716477; Y= 4611972).

Device Name: **TSS Portable handheld measurement instrument for turbidity/solids.**

Water turbidity standards: In accordance with the UKTAG proposed standard for suspended solids, August 2007

UKTAG proposed standard

	Min	Max
Water Turbidity (weighted particles) mg/l	25 mg/l 100 mg/l 200 mg/l 400 mg/l	100 mg/l low risk 200 mg/l moderate risk 400 mg/l high risk 400 < mg/l unacceptable risk

Map with samples points:

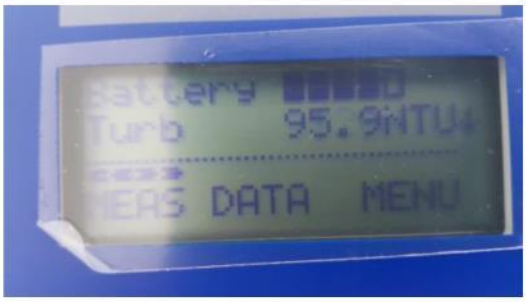
N1	Location	Measured Parameters	Unit	Results	Method
1	GPS 1: (X= 716499; Y= 4611932)	Suspended Solids	mg/L	25.17	Photometric

N1	Location	Measured Parameters	Unit	Results	Method
2	GPS 2: (X=716477; Y= 4611972)	Suspended Solids	mg/L	21.53	Photometric

Conclusion:

Based on the results of the tests conducted in two places GPS 1: (X= 716499; Y= 4611932) & GPS 2: (X=716477; Y= 4611972), Monitoring water turbidity level are under the norm of UKTAG standard.

Photos:



8.4 Annex 4 – Site re-entry walk over surveys (Flora and Fauna) (July - December, 2019)

8.4.1 July

Site re-entry walk over survey for preventing damage to Flora and Fauna

Batumi Costal Protection

Report #27 (July)

Location - Batumi City

Date: 11th July, 2019

This report reflects information about conducted site re-entry walk over survey on 11th July, 2019 of investigation existing Flora and Fauna terrestrial habitats. Investigation area was covered along the sea line, shown on the map below.

Please see the investigation location:

During the investigation period weather was cloudy. Investigation was conducted from 7 am to 10 pm. The investigation was conducted in the project alignment area.

There were several species of avifauna identified on the mentioned location, please see below the list of table:

Avifauna		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	11/02/2019	11/03/2019	03/04/2019	10/05/2019	10/06/2019	11/07/2019
დიდი კოკონა	Podiceps cristatus	67	1380	36	75	7	-	-
მცირე კოკონა	Tachybaptus ruficollis	3	3	1	-	-	-	-

დიდი ჩვამა	Phalacrocorax carbo	14	143	7	2	-	-	-
რუხი ყანჩა	Ardea cinerea	2	1	-	-	1	-	-
დიდი თეთრი ყანჩა	Ardea alba	1	-	-	-	-	-	-
მცირე თეთრი ყანჩა	Egretta garzetta	-	-	-	-	-	1	-
ღამის ყანჩა	Nycticorax nycticorax	-	-	-	-	-	-	-
ალკუნი	Alcedo atthis	-	-	-	-	-	-	-
ქოჩორა ყვინთია	Aythya fuligula	28	-	-	-	-	-	-
ძერა	Milvus migrans	1	1	-	9	3	2	-
ჩვეულებრივი კაკაჩა	Buteo buteo	2	-	-	-	-	-	-
მელოტა	Fulica atra	4	-	-	-	-	-	-
თეთრი ბოლოქანქარა	Motacilla alba	5	9	3	13	6	12	16
სკვინჩა	Fringilla coelebs	2	1	2	2	1	3	2
ჩიტბატონა	Carduelis carduelis	-	-	-	-	-	-	-
სახლის ბეღურა	Passer domesticus	11	4	5	6	2	17	9
მინდვრის ბეღურა	Passer montanus	-	-	-	-	-	-	-
რუხი ყვავი	Corvus cornix	8	7	9	24	13	9	11
ჩვეულებრივი თევზიყლაპია	Sterna hirundo	1	-	-	-	-	-	-
ყვითელფეხა თოლია	Larus michahellis	135	1100	65	87	56	30	27
ტბის თოლია	Chroicocephalus ridibundus	56	74	17	55	-	-	-
მებორნე	Actitis hypoleucos	-	-	-	-	-	-	-
მცირე წინტალა	Charadrius dubius	-	-	-	-	-	-	-
მიმინო	Accipiter nisus	-	-	-	1	1	-	-
შევარდენი	Falco subbuteo	-	-	-	-	-	-	-
ვერცხლისფერი თოლია	Larus cachinnans	-	-	-	-	-	-	-
ჩვეულებრივი ჭივჭავი	Phylloscopus collybita	-	-	-	-	-	1	-
სოფლის მერცხალი	Hirundo rustica	-	-	-	-	17	23	24
ჭინჭრაქა	Troglodytes troglodytes	-	-	-	-	-	-	-
მთის ბოლოქანქალა	Motacilla cinerea	-	-	-	-	-	-	-
ტურუხტანი	Philomachus pugnax	-	-	-	-	-	-	-
ყორანი	Corvus corone	-	-	-	4	2	3	-
გარეული იხვი	Anas platyrhynchos	-	30	-	-	-	-	-
ყვითელი ბოლოქანქარა	Motacilla citreola	-	-	-	1	-	-	-

There were several species of terrestrial mammals habitats identified on the mentioned location, please see below the list of table:

Terrestrial animals		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	11/02/2019	11/03/2019	03/04/2019	10/05/2019	10/06/2019	11/07/2019
წავი *	Lutralutra *	4	-	-	-	-	-	-
მაჩვი	Meles meles minor	7	-	-	-	-	-	-
ნუტრია	Myocastor coypus	8	-	-	-	-	-	-
ბუჩქნარის მემინდვრია	Microtus arvalis	14	-	-	-	-	-	-
მინდვრის თაგვი	Apodemus agrarius	23	-	-	-	-	-	-
ტბის ბაყაყი	Rana ridibunda	-	-	-	-	-	-	-
ვასაკა	Hyla arborea	15	-	-	-	-	-	-
ჩვეულებრივი გომბეშო	Bufo	32	-	-	-	-	-	-
მწვანე ბაყაყი	Rana esculenta	27	-	-	-	-	-	-
ჩვეულებრივი ტრიტონი	Triturus vulgaris	13	-	-	-	-	-	-
ჩვეულებრივი ანკარა	Natrix natrix	4	-	-	-	-	-	-
წყლის ანკარა	Natrix tessellata	9	-	-	-	-	-	-
კასპიის კუ	Mauremys caspica	2	-	-	-	-	-	-
ჭაობის კუ	Emys orbicularis	6	-	-	-	-	-	-
რუხი კურდღელი	Lepus europaeus	-	-	-	-	-	-	-
ჩვეულებრივი თხუნელა	Talpa europaea	-	-	-	-	-	-	-

There were several species of Flora identified on the mentioned location, please see below the list of table:

Species	Familia	Georgian Name	English Name	Number of trees
Torylis japonica	Apiaceae	ძაღლის ბირკა იაპონური	Erect hedgeparsley	-
Daucus carota	Apiaceae	ფერისცვალა	Wild carrot	-
Eryngium campestre	Apiaceae	ნარი	Field eryngo	-
Erigeron annuus	Asteraceae	ერთწლიანი ერიგერონი	Annual fleabane	-
Artemisia vulgaris	Asteraceae	მამულა	Common wormwood	-
Ambrosia artemisifolia	Asteraceae	ამბროზია	Common ragweed	-
Cirsium vulgare	Asteraceae	ნარი ჩვეულებრივი	Spear thistle	-
Crepis rhoedifolia	Asteraceae	კიჭკიჭა	Stinking hawksbeard	-
Cychorium intibus	Asteraceae	ვარდკაჭკაჭა	Common chicory	-

Lactuca seriola	Asteraceae	ღორის ქადა	Prickly lettuce	-
Sonchus oleraceus	Asteraceae	ღიჭა	Common sowthistle	-
Erigeron canadensis	Asteraceae	ცხენისკუდა	Canadian horseweed	-
Xanthium strumarium	Asteraceae	ღორის ბირკა	Rough cocklebur	-
Arctium lappa	Asteraceae	ოროვანდი	Greater burdock	-
Tagetes minuta	Asteraceae	ხავერდა	Muster John Henry	-
Anthemis euxina	Asteraceae	ირაგა ეუქსინური	Cota tinctoria	-
Bidens tripartita	Asteraceae	ორკბილა	three-lobe beggarticks	-
Leontodon danubialis	Asteraceae	ლომისკბილა	Hawkbits	-
Amaranthus albus	Amaranthus albus	ჯიჯლაყა თეთრი	Common tumbleweed	-
Chenopodium album	Chenopodiaceae	ნაცარქათამა	Lamb's quarters	-
Chenopodium ambrosioides	Chenopodiaceae	მექსიკური ჩაი	Wormseed	-
Lepidium texanum	Crucciferae	წიწმატი ველური	Peppercress	-
Lepidium sativum	Crucciferae	წიწმატი ტყის	Garden cress	-
Raphanus maritimus	Crucciferae	ზღვის ბოლოკი	Wild radish	-
Cyperus badius	Crucciferae	წამალწვრილი	Coco-grass	-
Luzula multiflora	Juncaceae	ისლურა	Common woodrush	-
Equisetum ramosissimum	Equisetaceae	შვიტა	Branched horsetail	-
Lotus corniculatus	Fabaceae	კურდღლისფრჩხილა	Common bird's-foot trefoil	-
Lespedeza striata	Fabaceae	იაპონური სამყურა	Japanese clover	-
Trifolium campestre	Fabaceae	სამყურა ველის	Hop trefoil	-
Trifolium arvense	Fabaceae	ბურტყლა სამყურა	Hare's-foot clover	-
Trifolium pratense	Fabaceae	წითელი სამყურა	Red clover	-
Prunella vulgaris	Lamiaceae	გობისცხვირა	Common self-heal	-
Mentha pulegium	Lamiaceae	ომბალო	Peppercress	-
Lythrum salicaria	Lythraceae	ცოცხმაგარა	Purple loosestrife	-
Malva neglecta	Malvaceae	ბალბა	Common mallow	-
Ficus carica	Moraceae	ლეღვი	Common fig	2 trees
Morus alba	Moraceae	თეთრი თუთა	White mulberry	2 trees
Oxalis corniculata	Moraceae	მჟაველა	Creeping woodsorrel	-
Phytolacca americana	Phytolaccaceae	ჭიაფერა	American pokeweed	-
Plantago lanceolata	Plantaginaceae	ლანცეტა მრავალძარღვა	English plantain	-
Plantago major	Plantaginaceae	მრავალძარღვა	Broadleaf plantain	-
Setaria glauca	Poaceae	ყვითელი ძურწა	Pearl millet	-
Sporobolus fertilis	Poaceae	სპორობოლუსი ინდური	Dropseeds	-
Poa annua	Poaceae	ერთწლოვანი თივაქასრა	Annual meadow grass	-
Digitaria violascens	Poaceae	მწყერფეხა	Finger-grass	-
Echinochloa crusgali	Poaceae	ბურჩხა	Barnyard grass	-
Cynodon dactilon	Poaceae	გლერტა	Vilfa stellata	-
Sieglingia decumbens	Poaceae	სიგლინგია	Heath grass	-
Eleusine indica	Poaceae	ინდური ელეუზინა	Indian goosegrass	-
Paspalum dilatatum	Poaceae	ფართო წიწიბურა	Dallisgrass	-

Polygonum nodosum	Polygonaceae	ვიწროფოთოლა წალიკა	Pale persicaria	-
Polygonum persicaria	Polygonaceae	ბოსტნის წალიკა	Lady's thumb	-
Polygonum perfoliatum	Polygonaceae	გაჩვრეტილფოთოლა წალიკა	Mile-a-minute weed	-
Polygonum convolvulus	Polygonaceae	ყანის ჭლექი	Black-bindweed	-
Rumex obtusifolius	Polygonaceae	მჟავუნა ბლაგვფოთოლა	Bitter dock	-
Rumex acetosella	Polygonaceae	კოკომჟავა	Sheep's sorrel	-
Portulaca oleracea	Portulacaceae	დანდური	Common purslane	-
Salix alba	Salicaceae	წნორი	White willow	2 trees
Verbascum blattaria	Scrophulariaceae	გულსოსანა	Moth mullein	-
Rhus javanica	Anacardiaceae	იაპონური თუთუბო	Nutgall tree	-
Datura stramonium	Anacardiaceae	ლემა	Jimsonweed	-
Physalis ixocarpa	Solanaceae	ონტკოფა	Tomatillo	-
Solanum nigrum	Solanaceae	ძაღყურძენა	European black nightshade	-
Verbena officinalis	Verbenaceae	ცოცხანა	Common vervain	-
Verbena brasiliensis	Verbenaceae	ბრაზილიური ცოცხანა	Brazilian vervain	-

Conclusion: To date no impacts caused by working activities have been observed on flora in the proximity of the working areas.

Nowadays, no one from these identified existing spices aren't doing the breeding and nestling near the project working areas. In case of any breeding and nestling period all construction works will be stopped, which may have any potential impact on them and their locations will be marked and protected.

Note:

Species indicated with * sign in above table belong to IUCN Red List (VU /IUCN near threatened).

Prepared by: Jimsher Mamuchadze Signature: _____

Prepared by: Nino Memiadze Signature: _____

8.4.2 August

Site re-entry walk over survey for preventing damage to Flora and Fauna

Batumi Costal Protection

Report #28 (August)

Location - Batumi City

Date: 7th August, 2019

This report reflects information about conducted site re-entry walk over survey on 7th August, 2019 of investigation existing Flora and Fauna terrestrial habitats. Investigation area was covered along the sea line, shown on the map below.

Please see the investigation location:

During the investigation period weather was cloudy. Investigation was conducted from 7 am to 10 pm. The investigation was conducted in the project alignment area.

There were several species of avifauna identified on the mentioned location, please see below the list of table:

Avifauna		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	11/03/2019	03/04/2019	10/05/2019	10/06/2019	11/07/2019	07/08/2019
დიდი კოკონა	Podiceps cristatus	67	36	75	7	-	-	-
მცირე კოკონა	Tachybaptus ruficollis	3	1	-	-	-	-	-

დიდი ჩვამა	Phalacrocorax carbo	14	7	2	-	-	-	-
რუხი ყანჩა	Ardea cinerea	2	-	-	1	-	-	-
დიდი თეთრი ყანჩა	Ardea alba	1	-	-	-	-	-	-
მცირე თეთრი ყანჩა	Egretta garzetta	-	-	-	-	1	-	1
ღამის ყანჩა	Nycticorax nycticorax	-	-	-	-	-	-	-
ალკუნი	Alcedo atthis	-	-	-	-	-	-	-
ქოჩორა ყვინთია	Aythya fuligula	28	-	-	-	-	-	-
ძერა	Milvus migrans	1	-	9	3	2	-	-
ჩვეულებრივი კაკაჩა	Buteo buteo	2	-	-	-	-	-	-
მელოტა	Fulica atra	4	-	-	-	-	-	-
თეთრი ბოლოქანქარა	Motacilla alba	5	3	13	6	12	16	18
სკვინჩა	Fringilla coelebs	2	2	2	1	3	2	3
ჩიტბატონა	Carduelis carduelis	-	-	-	-	-	-	-
სახლის ბეღურა	Passer domesticus	11	5	6	2	17	9	8
მინდვრის ბეღურა	Passer montanus	-	-	-	-	-	-	-
რუხი ყვავი	Corvus cornix	8	9	24	13	9	11	7
ჩვეულებრივი თევზიყლაპია	Sterna hirundo	1	-	-	-	-	-	-
ყვითელფეხა თოლია	Larus michahellis	135	65	87	56	30	27	45
ტბის თოლია	Chroicocephalus ridibundus	56	17	55	-	-	-	-
მებორნე	Actitis hypoleucos	-	-	-	-	-	-	-
მცირე წინტალა	Charadrius dubius	-	-	-	-	-	-	1
მიმინო	Accipiter nisus	-	-	1	1	-	-	-
შევარდენი	Falco subbuteo	-	-	-	-	-	-	-
ვერცხლისფერი თოლია	Larus cachinnans	-	-	-	-	-	-	-
ჩვეულებრივი ჭივჭავი	Phylloscopus collybita	-	-	-	-	1	-	-
სოფლის მერცხალი	Hirundo rustica	-	-	-	17	23	24	28
ჭინჭრაქა	Troglodytes troglodytes	-	-	-	-	-	-	-
მთის ბოლოქანქალა	Motacilla cinerea	-	-	-	-	-	-	-
ტურუხტანი	Philomachus pugnax	-	-	-	-	-	-	-
ყორანი	Corvus corone	-	-	4	2	3	-	2
გარეული იხვი	Anas platyrhynchos	-	-	-	-	-	-	-
ყვითელი ბოლოქანქარა	Motacilla citreola	-	-	1	-	-	-	-

There were several species of terrestrial mammals habitats identified on the mentioned location, please see below the list of table:

Terrestrial animals		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	11/03/2019	03/04/2019	10/05/2019	10/06/2019	11/07/2019	07/08/2019
წავი *	Lutralutra *	4	-	-	-	-	-	-
მაჩვი	Meles meles minor	7	-	-	-	-	-	-
ნუტრია	Myocastor coypus	8	-	-	-	-	-	-
ბუჩქნარის მემინდვრია	Microtus arvalis	14	-	-	-	-	-	-
მინდვრის თაგვი	Apodemus agrarius	23	-	-	-	-	-	-
ტბის ბაყაყი	Rana ridibunda	-	-	-	-	-	-	-
ვასაკა	Hyla arborea	15	-	-	-	-	-	-
ჩვეულებრივი გომბეშო	Bufo	32	-	-	-	-	-	-
მწვანე ბაყაყი	Rana esculenta	27	-	-	-	-	-	-
ჩვეულებრივი ტრიტონი	Triturus vulgaris	13	-	-	-	-	-	-
ჩვეულებრივი ანკარა	Natrix natrix	4	-	-	-	-	-	-
წყლის ანკარა	Natrix tessellata	9	-	-	-	-	-	-
კასპიის კუ	Mauremys caspica	2	-	-	-	-	-	-
ჭაობის კუ	Emys orbicularis	6	-	-	-	-	-	-
რუხი კურდღელი	Lepus europaeus	-	-	-	-	-	-	-
ჩვეულებრივი თხუნელა	Talpa europaea	-	-	-	-	-	-	-

There were several species of Flora identified on the mentioned location, please see below the list of table:

Species	Familia	Georgian Name	English Name	Number of trees
Torylis japonica	Apiaceae	ძაღლის ბირკა იაპონური	Erect hedgeparsley	-
Daucus carota	Apiaceae	ფერისცვალა	Wild carrot	-
Eryngium campestre	Apiaceae	ნარი	Field eryngo	-
Erigeron annuus	Asteraceae	ერთწლიანი ერიგერონი	Annual fleabane	-
Artemisia vulgaris	Asteraceae	მამულა	Common wormwood	-
Ambrosia artemisifolia	Asteraceae	ამბროზია	Common ragweed	-
Cirsium vulgare	Asteraceae	ნარი ჩვეულებრივი	Spear thistle	-
Crepis rhoedifolia	Asteraceae	კიჭკიჭა	Stinking hawksbeard	-
Cychorium intibus	Asteraceae	ვარდკაჭკაჭა	Common chicory	-

Lactuca seriola	Asteraceae	ღორის ქადა	Prickly lettuce	-
Sonchus oleraceus	Asteraceae	ღიჭა	Common sowthistle	-
Erigeron canadensis	Asteraceae	ცხენისკუდა	Canadian horseweed	-
Xanthium strumarium	Asteraceae	ღორის ბირკა	Rough cocklebur	-
Arctium lappa	Asteraceae	ოროვანდი	Greater burdock	-
Tagetes minuta	Asteraceae	ხავერდა	Muster John Henry	-
Anthemis euxina	Asteraceae	ირაგა ეუქსინური	Cota tinctoria	-
Bidens tripartita	Asteraceae	ორკბილა	three-lobe beggarticks	-
Leontodon danubialis	Asteraceae	ლომისკბილა	Hawkbits	-
Amaranthus albus	Amaranthus albus	ჯიჯლაყა თეთრი	Common tumbleweed	-
Chenopodium album	Chenopodiaceae	ნაცარქათამა	Lamb's quarters	-
Chenopodium ambrosioides	Chenopodiaceae	მექსიკური ჩაი	Wormseed	-
Lepidium texanum	Crucciferae	წიწმატი ველური	Peppercress	-
Lepidium sativum	Crucciferae	წიწმატი ტყის	Garden cress	-
Raphanus maritimus	Crucciferae	ზღვის ბოლოკი	Wild radish	-
Cyperus badius	Crucciferae	წამალწვრილი	Coco-grass	-
Luzula multiflora	Juncaceae	ისლურა	Common woodrush	-
Equisetum ramosissimum	Equisetaceae	შვიტა	Branched horsetail	-
Lotus corniculatus	Fabaceae	კურდღლისფრჩხილა	Common bird's-foot trefoil	-
Lespedeza striata	Fabaceae	იაპონური სამყურა	Japanese clover	-
Trifolium campestre	Fabaceae	სამყურა ველის	Hop trefoil	-
Trifolium arvense	Fabaceae	ბურტყლა სამყურა	Hare's-foot clover	-
Trifolium pratense	Fabaceae	წითელი სამყურა	Red clover	-
Prunella vulgaris	Lamiaceae	გობისცხვირა	Common self-heal	-
Mentha pulegium	Lamiaceae	ომბალო	Peppercress	-
Lythrum salicaria	Lythraceae	ცოცხმაგარა	Purple loosestrife	-
Malva neglecta	Malvaceae	ბალბა	Common mallow	-
Ficus carica	Moraceae	ლეღვი	Common fig	2 trees
Morus alba	Moraceae	თეთრი თუთა	White mulberry	2 trees
Oxalis corniculata	Moraceae	მჟაველა	Creeping woodsorrel	-
Phytolacca americana	Phytolaccaceae	ჭიაფერა	American pokeweed	-
Plantago lanceolata	Plantaginaceae	ლანცეტა მრავალძარღვა	English plantain	-
Plantago major	Plantaginaceae	მრავალძარღვა	Broadleaf plantain	-
Setaria glauca	Poaceae	ყვითელი ძურწა	Pearl millet	-
Sporobolus fertilis	Poaceae	სპორობოლუსი ინდური	Dropseeds	-
Poa annua	Poaceae	ერთწლოვანი თივაქასრა	Annual meadow grass	-
Digitaria violascens	Poaceae	მწყერფეხა	Finger-grass	-
Echinochloa crusgali	Poaceae	ბურჩხა	Barnyard grass	-
Cynodon dactilon	Poaceae	გლერტა	Vilfa stellata	-
Sieglingia decumbens	Poaceae	სიგლინგია	Heath grass	-
Eleusine indica	Poaceae	ინდური ელეუზინა	Indian goosegrass	-
Paspalum dilatatum	Poaceae	ფართო წიწიბურა	Dallisgrass	-

Polygonum nodosum	Polygonaceae	ვიწროფოთოლა წალიკა	Pale persicaria	-
Polygonum persicaria	Polygonaceae	ბოსტნის წალიკა	Lady's thumb	-
Polygonum perfoliatum	Polygonaceae	გაჩვრეტილფოთოლა წალიკა	Mile-a-minute weed	-
Polygonum convolvulus	Polygonaceae	ყანის ჭლექი	Black-bindweed	-
Rumex obtusifolius	Polygonaceae	მჟავუნა ბლაგვფოთოლა	Bitter dock	-
Rumex acetosella	Polygonaceae	კოკომჟავა	Sheep's sorrel	-
Portulaca oleracea	Portulacaceae	დანდური	Common purslane	-
Salix alba	Salicaceae	წნორი	White willow	2 trees
Verbascum blattaria	Scrophulariaceae	გულსოსანა	Moth mullein	-
Rhus javanica	Anacardiaceae	იაპონური თუთუბო	Nutgall tree	-
Datura stramonium	Anacardiaceae	ლემა	Jimsonweed	-
Physalis ixocarpa	Solanaceae	ონტკოფა	Tomatillo	-
Solanum nigrum	Solanaceae	ძაღყურძენა	European black nightshade	-
Verbena officinalis	Verbenaceae	ცოცხანა	Common vervain	-
Verbena brasiliensis	Verbenaceae	ბრაზილიური ცოცხანა	Brazilian vervain	-

Conclusion: To date no impacts caused by working activities have been observed on flora in the proximity of the working areas.

Nowadays, no one from these identified existing spices aren't doing the breeding and nestling near the project working areas. In case of any breeding and nestling period all construction works will be stopped, which may have any potential impact on them and their locations will be marked and protected.

Note:

Species indicated with * sign in above table belong to IUCN Red List (VU /IUCN near threatened).

Prepared by: Jimsher Mamuchadze Signature: _____

Prepared by: Nino Memiadze Signature: _____

8.4.3 September

Site re-entry walk over survey for preventing damage to Flora and Fauna

Batumi Costal Protection

Report #29 (September)

Location - Batumi City

Date: 9th September, 2019

This report reflects information about conducted site re-entry walk over survey on 9th September, 2019 of investigation existing Flora and Fauna terrestrial habitats. Investigation area was covered along the sea line, shown on the map below.

Please see the investigation location:

During the investigation period weather was cloudy. Investigation was conducted from 7 am to 10 pm. The investigation was conducted in the project alignment area.

There were several species of avifauna identified on the mentioned location, please see below the list of table:

Avifauna		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	03/04/2019	10/05/2019	10/06/2019	11/07/2019	07/08/2019	09/09/2019
დიდი კოკონა	Podiceps cristatus	67	75	7	-	-	-	-
მცირე კოკონა	Tachybaptus ruficollis	3	-	-	-	-	-	-

დიდი ჩვამა	Phalacrocorax carbo	14	2	-	-	-	-	3
რუხი ყანჩა	Ardea cinerea	2	-	1	-	-	-	-
დიდი თეთრი ყანჩა	Ardea alba	1	-	-	-	-	-	-
მცირე თეთრი ყანჩა	Egretta garzetta	-	-	-	1	-	1	1
ღამის ყანჩა	Nycticorax nycticorax	-	-	-	-	-	-	-
ალკუნი	Alcedo atthis	-	-	-	-	-	-	-
ქოჩორა ყვინთია	Aythya fuligula	28	-	-	-	-	-	-
ძერა	Milvus migrans	1	9	3	2	-	-	5
ჩვეულებრივი კაკაჩა	Buteo buteo	2	-	-	-	-	-	-
მელოტა	Fulica atra	4	-	-	-	-	-	-
თეთრი ბოლოქანქარა	Motacilla alba	5	13	6	12	16	18	16
სკვინჩა	Fringilla coelebs	2	2	1	3	2	3	1
ჩიტბატონა	Carduelis carduelis	-	-	-	-	-	-	-
სახლის ბეღურა	Passer domesticus	11	6	2	17	9	8	13
მინდვრის ბეღურა	Passer montanus	-	-	-	-	-	-	-
რუხი ყვავი	Corvus cornix	8	24	13	9	11	7	9
ჩვეულებრივი თევზიყლაპია	Sterna hirundo	1	-	-	-	-	-	-
ყვითელფეხა თოლია	Larus michahellis	135	87	56	30	27	45	71
ტბის თოლია	Chroicocephalus ridibundus	56	55	-	-	-	-	-
მებორნე	Actitis hypoleucos	-	-	-	-	-	-	-
მცირე წინტალა	Charadrius dubius	-	-	-	-	-	1	1
მიმინო	Accipiter nisus	-	1	1	-	-	-	2
შევარდენი	Falco subbuteo	-	-	-	-	-	-	-
ვერცხლისფერი თოლია	Larus cachinnans	-	-	-	-	-	-	-
ჩვეულებრივი ჭივჭავი	Phylloscopus collybita	-	-	-	1	-	-	-
სოფლის მერცხალი	Hirundo rustica	-	-	17	23	24	28	-
ჭინჭრაქა	Troglodytes troglodytes	-	-	-	-	-	-	-
მთის ბოლოქანქალა	Motacilla cinerea	-	-	-	-	-	-	-
ტურუხტანი	Philomachus pugnax	-	-	-	-	-	-	-
ყორანი	Corvus corone	-	4	2	3	-	2	1
გარეული იხვი	Anas platyrhynchos	-	-	-	-	-	-	-
ყვითელი ბოლოქანქარა	Motacilla citreola	-	1	-	-	-	-	-
შავშუბლა ღაჟო	Lanius minor	-	-	-	-	-	-	1

There were several species of terrestrial mammals habitats identified on the mentioned location, please see below the list of table:

Terrestrial animals		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	03/04/2019	10/05/2019	10/06/2019	11/07/2019	07/08/2019	09/09/2019
წავი *	Lutralutra *	4	-	-	-	-	-	-
მაჩვი	Meles meles minor	7	-	-	-	-	-	-
ნუტრია	Myocastor coypus	8	-	-	-	-	-	-
ბუჩქნარის მემინდვრია	Microtus arvalis	14	-	-	-	-	-	-
მინდვრის თაგვი	Apodemus agrarius	23	-	-	-	-	-	-
ტბის ბაყაყი	Rana ridibunda	-	-	-	-	-	-	-
ვასაკა	Hyla arborea	15	-	-	-	-	-	-
ჩვეულებრივი გომბეშო	Bufo	32	-	-	-	-	-	-
მწვანე ბაყაყი	Rana esculenta	27	-	-	-	-	-	-
ჩვეულებრივი ტრიტონი	Triturus vulgaris	13	-	-	-	-	-	-
ჩვეულებრივი ანკარა	Natrix natrix	4	-	-	-	-	-	-
წყლის ანკარა	Natrix tessellata	9	-	-	-	-	-	-
კასპიის კუ	Mauremys caspica	2	-	-	-	-	-	-
ჭაობის კუ	Emys orbicularis	6	-	-	-	-	-	-
რუხი კურდღელი	Lepus europaeus	-	-	-	-	-	-	-
ჩვეულებრივი თხუნელა	Talpa europaea	-	-	-	-	-	-	-

There were several species of Flora identified on the mentioned location, please see below the list of table:

Species	Familia	Georgian Name	English Name	Number of trees
Torylis japonica	Apiaceae	ძაღლის ბირკა იაპონური	Erect hedgeparsley	-
Daucus carota	Apiaceae	ფერისცვალა	Wild carrot	-
Eryngium campestre	Apiaceae	ნარი	Field eryngo	-
Erigeron annuus	Asteraceae	ერთწლიანი ერიგერონი	Annual fleabane	-
Artemisia vulgaris	Asteraceae	მამულა	Common wormwood	-
Ambrosia artemisifolia	Asteraceae	ამბროზია	Common ragweed	-
Cirsium vulgare	Asteraceae	ნარი ჩვეულებრივი	Spear thistle	-
Crepis rhoedifolia	Asteraceae	კიჭკიჭა	Stinking hawksbeard	-
Cychorium intibus	Asteraceae	ვარდკაჭკაჭა	Common chicory	-

Lactuca seriola	Asteraceae	ღორის ქადა	Prickly lettuce	-
Sonchus oleraceus	Asteraceae	ღიჭა	Common sowthistle	-
Erigeron canadensis	Asteraceae	ცხენისკუდა	Canadian horseweed	-
Xanthium strumarium	Asteraceae	ღორის ბირკა	Rough cocklebur	-
Arctium lappa	Asteraceae	ოროვანდი	Greater burdock	-
Tagetes minuta	Asteraceae	ხავერდა	Muster John Henry	-
Anthemis euxina	Asteraceae	ირაგა ეუქსინური	Cota tinctoria	-
Bidens tripartita	Asteraceae	ორკბილა	three-lobe beggarticks	-
Leontodon danubialis	Asteraceae	ლომისკბილა	Hawkbits	-
Amaranthus albus	Amaranthus albus	ჯიჯლაყა თეთრი	Common tumbleweed	-
Chenopodium album	Chenopodiaceae	ნაცარქათამა	Lamb's quarters	-
Chenopodium ambrosioides	Chenopodiaceae	მექსიკური ჩაი	Wormseed	-
Lepidium texanum	Crucciferae	წიწმატი ველური	Peppercress	-
Lepidium sativum	Crucciferae	წიწმატი ტყის	Garden cress	-
Raphanus maritimus	Crucciferae	ზღვის ბოლოკი	Wild radish	-
Cyperus badius	Crucciferae	წამალწვრილი	Coco-grass	-
Luzula multiflora	Juncaceae	ისლურა	Common woodrush	-
Equisetum ramosissimum	Equisetaceae	შვიტა	Branched horsetail	-
Lotus corniculatus	Fabaceae	კურდღლისფრჩხილა	Common bird's-foot trefoil	-
Lespedeza striata	Fabaceae	იაპონური სამყურა	Japanese clover	-
Trifolium campestre	Fabaceae	სამყურა ველის	Hop trefoil	-
Trifolium arvense	Fabaceae	ბურტყლა სამყურა	Hare's-foot clover	-
Trifolium pratense	Fabaceae	წითელი სამყურა	Red clover	-
Prunella vulgaris	Lamiaceae	გობისცხვირა	Common self-heal	-
Mentha pulegium	Lamiaceae	ომბალო	Peppercress	-
Lythrum salicaria	Lythraceae	ცოცხმაგარა	Purple loosestrife	-
Malva neglecta	Malvaceae	ბალბა	Common mallow	-
Ficus carica	Moraceae	ლეღვი	Common fig	2 trees
Morus alba	Moraceae	თეთრი თუთა	White mulberry	2 trees
Oxalis corniculata	Moraceae	მჟაველა	Creeping woodsorrel	-
Phytolacca americana	Phytolaccaceae	ჭიაფერა	American pokeweed	-
Plantago lanceolata	Plantaginaceae	ლანცეტა მრავალძარღვა	English plantain	-
Plantago major	Plantaginaceae	მრავალძარღვა	Broadleaf plantain	-
Setaria glauca	Poaceae	ყვითელი ძურწა	Pearl millet	-
Sporobolus fertilis	Poaceae	სპორობოლუსი ინდური	Dropseeds	-
Poa annua	Poaceae	ერთწლოვანი თივაქასრა	Annual meadow grass	-
Digitaria violascens	Poaceae	მწყერფეხა	Finger-grass	-
Echinochloa crusgali	Poaceae	ბურჩხა	Barnyard grass	-
Cynodon dactilon	Poaceae	გლერტა	Vilfa stellata	-
Sieglingia decumbens	Poaceae	სიგლინგია	Heath grass	-
Eleusine indica	Poaceae	ინდური ელეუზინა	Indian goosegrass	-
Paspalum dilatatum	Poaceae	ფართო წიწიბურა	Dallisgrass	-

Polygonum nodosum	Polygonaceae	ვიწროფოთოლა წალიკა	Pale persicaria	-
Polygonum persicaria	Polygonaceae	ბოსტნის წალიკა	Lady's thumb	-
Polygonum perfoliatum	Polygonaceae	გაჩვრეტილფოთოლა წალიკა	Mile-a-minute weed	-
Polygonum convolvulus	Polygonaceae	ყანის ჭლექი	Black-bindweed	-
Rumex obtusifolius	Polygonaceae	მჟავუნა ბლაგვფოთოლა	Bitter dock	-
Rumex acetosella	Polygonaceae	კოკომჟავა	Sheep's sorrel	-
Portulaca oleracea	Portulacaceae	დანდური	Common purslane	-
Salix alba	Salicaceae	წნორი	White willow	2 trees
Verbascum blattaria	Scrophulariaceae	გულსოსანა	Moth mullein	-
Rhus javanica	Anacardiaceae	იაპონური თუთუბო	Nutgall tree	-
Datura stramonium	Anacardiaceae	ლემა	Jimsonweed	-
Physalis ixocarpa	Solanaceae	ონტკოფა	Tomatillo	-
Solanum nigrum	Solanaceae	ძაღყურძენა	European black nightshade	-
Verbena officinalis	Verbenaceae	ცოცხანა	Common vervain	-
Verbena brasiliensis	Verbenaceae	ბრაზილიური ცოცხანა	Brazilian vervain	-

Conclusion: To date no impacts caused by working activities have been observed on flora in the proximity of the working areas.

Nowadays, no one from these identified existing spices aren't doing the breeding and nestling near the project working areas. In case of any breeding and nestling period all construction works will be stopped, which may have any potential impact on them and their locations will be marked and protected.

Note:

Species indicated with * sign in above table belong to IUCN Red List (VU /IUCN near threatened).

Prepared by: Jimsher Mamuchadze Signature: _____

Prepared by: Nino Memiadze Signature: _____

8.4.4 October

Site re-entry walk over survey for preventing damage to Flora and Fauna

Batumi Costal Protection

Report #30 (October)

Location - Batumi City

Date: 9th October, 2019

This report reflects information about conducted site re-entry walk over survey on 9th October, 2019 of investigation existing Flora and Fauna terrestrial habitats. Investigation area was covered along the sea line, shown on the map below.

Please see the investigation location:

During the investigation period weather was cloudy. Investigation was conducted from 7 am to 10 pm. The investigation was conducted in the project alignment area.

There were several species of avifauna identified on the mentioned location, please see below the list of table:

Avifauna		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	10/05/2019	10/06/2019	11/07/2019	07/08/2019	09/09/2019	09/10/2019
დიდი კოკონა	Podiceps cristatus	67	7	-	-	-	-	1
მცირე კოკონა	Tachybaptus ruficollis	3	-	-	-	-	-	-

დიდი ჩვამა	Phalacrocorax carbo	14	-	-	-	-	3	2
რუხი ყანჩა	Ardea cinerea	2	1	-	-	-	-	-
დიდი თეთრი ყანჩა	Ardea alba	1	-	-	-	-	-	-
მცირე თეთრი ყანჩა	Egretta garzetta	-	-	1	-	1	1	1
ღამის ყანჩა	Nycticorax nycticorax	-	-	-	-	-	-	-
ალკუნი	Alcedo atthis	-	-	-	-	-	-	-
ქოჩორა ყვინთია	Aythya fuligula	28	-	-	-	-	-	-
ძერა	Milvus migrans	1	3	2	-	-	5	-
ჩვეულებრივი კაკაჩა	Buteo buteo	2	-	-	-	-	-	1
მელოტა	Fulica atra	4	-	-	-	-	-	-
თეთრი ბოლოქანქარა	Motacilla alba	5	6	12	16	18	16	5
სკვინჩა	Fringilla coelebs	2	1	3	2	3	1	-
ჩიტბატონა	Carduelis carduelis	-	-	-	-	-	-	-
სახლის ბეღურა	Passer domesticus	11	2	17	9	8	13	8
მინდვრის ბეღურა	Passer montanus	-	-	-	-	-	-	-
რუხი ყვავი	Corvus cornix	8	13	9	11	7	9	4
ჩვეულებრივი თევზიყლაპია	Sterna hirundo	1	-	-	-	-	-	1
ყვითელფეხა თოლია	Larus michahellis	135	56	30	27	45	71	16
ტბის თოლია	Chroicocephalus ridibundus	56	-	-	-	-	-	-
მებორნე	Actitis hypoleucos	-	-	-	-	-	-	-
მცირე წინტალა	Charadrius dubius	-	-	-	-	1	1	-
მიმინო	Accipiter nisus	-	1	-	-	-	2	-
შევარდენი	Falco subbuteo	-	-	-	-	-	-	-
ვერცხლისფერი თოლია	Larus cachinnans	-	-	-	-	-	-	-
ჩვეულებრივი ჭივჭავი	Phylloscopus collybita	-	-	1	-	-	-	-
სოფლის მერცხალი	Hirundo rustica	-	17	23	24	28	-	-
ჭინჭრაქა	Troglodytes troglodytes	-	-	-	-	-	-	-
მთის ბოლოქანქალა	Motacilla cinerea	-	-	-	-	-	-	-
ტურუხტანი	Philomachus pugnax	-	-	-	-	-	-	-
ყორანი	Corvus corone	-	2	3	-	2	1	-
გარეული იხვი	Anas platyrhynchos	-	-	-	-	-	-	-
ყვითელი ბოლოქანქარა	Motacilla citreola	-	-	-	-	-	-	-
შავშუბლა ღაჟო	Lanius minor	-	-	-	-	-	1	-

There were several species of terrestrial mammals habitats identified on the mentioned location, please see below the list of table:

Terrestrial animals		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	10/05/2019	10/06/2019	11/07/2019	07/08/2019	09/09/2019	09/10/2019
წავი *	Lutralutra *	4	-	-	-	-	-	-
მაჩვი	Meles meles minor	7	-	-	-	-	-	-
ნუტრია	Myocastor coypus	8	-	-	-	-	-	-
ბუჩქნარის მემინდვრია	Microtus arvalis	14	-	-	-	-	-	-
მინდვრის თაგვი	Apodemus agrarius	23	-	-	-	-	-	-
ტბის ბაყაყი	Rana ridibunda	-	-	-	-	-	-	-
ვასაკა	Hyla arborea	15	-	-	-	-	-	-
ჩვეულებრივი გომბეშო	Bufo	32	-	-	-	-	-	-
მწვანე ბაყაყი	Rana esculenta	27	-	-	-	-	-	-
ჩვეულებრივი ტრიტონი	Triturus vulgaris	13	-	-	-	-	-	-
ჩვეულებრივი ანკარა	Natrix natrix	4	-	-	-	-	-	-
წყლის ანკარა	Natrix tessellata	9	-	-	-	-	-	-
კასპიის კუ	Mauremys caspica	2	-	-	-	-	-	-
ჭაობის კუ	Emys orbicularis	6	-	-	-	-	-	-
რუხი კურდღელი	Lepus europaeus	-	-	-	-	-	-	-
ჩვეულებრივი თხუნელა	Talpa europaea	-	-	-	-	-	-	-

There were several species of Flora identified on the mentioned location, please see below the list of table:

Species	Familia	Georgian Name	English Name	Number of trees
Torylis japonica	Apiaceae	ძაღლის ბირკა იაპონური	Erect hedgeparsley	-
Daucus carota	Apiaceae	ფერისცვალა	Wild carrot	-
Eryngium campestre	Apiaceae	ნარი	Field eryngo	-
Erigeron annuus	Asteraceae	ერთწლიანი ერიგერონი	Annual fleabane	-
Artemisia vulgaris	Asteraceae	მამულა	Common wormwood	-
Ambrosia artemisifolia	Asteraceae	ამბროზია	Common ragweed	-
Cirsium vulgare	Asteraceae	ნარი ჩვეულებრივი	Spear thistle	-
Crepis rhoedifolia	Asteraceae	კიჭკიჭა	Stinking hawksbeard	-
Cychorium intibus	Asteraceae	ვარდკაჭკაჭა	Common chicory	-

Lactuca seriola	Asteraceae	ღორის ქადა	Prickly lettuce	-
Sonchus oleraceus	Asteraceae	ღიჭა	Common sowthistle	-
Erigeron canadensis	Asteraceae	ცხენისკუდა	Canadian horseweed	-
Xanthium strumarium	Asteraceae	ღორის ბირკა	Rough cocklebur	-
Arctium lappa	Asteraceae	ოროვანდი	Greater burdock	-
Tagetes minuta	Asteraceae	ხავერდა	Muster John Henry	-
Anthemis euxina	Asteraceae	ირაგა ეუქსინური	Cota tinctoria	-
Bidens tripartita	Asteraceae	ორკბილა	three-lobe beggarticks	-
Leontodon danubialis	Asteraceae	ლომისკბილა	Hawkbits	-
Amaranthus albus	Amaranthus albus	ჯიჯლაყა თეთრი	Common tumbleweed	-
Chenopodium album	Chenopodiaceae	ნაცარქათამა	Lamb's quarters	-
Chenopodium ambrosioides	Chenopodiaceae	მექსიკური ჩაი	Wormseed	-
Lepidium texanum	Crucciferae	წიწმატი ველური	Peppercress	-
Lepidium sativum	Crucciferae	წიწმატი ტყის	Garden cress	-
Raphanus maritimus	Crucciferae	ზღვის ბოლოკი	Wild radish	-
Cyperus badius	Crucciferae	წამალწვრილი	Coco-grass	-
Luzula multiflora	Juncaceae	ისლურა	Common woodrush	-
Equisetum ramosissimum	Equisetaceae	შვიტა	Branched horsetail	-
Lotus corniculatus	Fabaceae	კურდღლისფრჩხილა	Common bird's-foot trefoil	-
Lespedeza striata	Fabaceae	იაპონური სამყურა	Japanese clover	-
Trifolium campestre	Fabaceae	სამყურა ველის	Hop trefoil	-
Trifolium arvense	Fabaceae	ბურტყლა სამყურა	Hare's-foot clover	-
Trifolium pratense	Fabaceae	წითელი სამყურა	Red clover	-
Prunella vulgaris	Lamiaceae	გობისცხვირა	Common self-heal	-
Mentha pulegium	Lamiaceae	ომბალო	Peppercress	-
Lythrum salicaria	Lythraceae	ცოცხმაგარა	Purple loosestrife	-
Malva neglecta	Malvaceae	ბალბა	Common mallow	-
Ficus carica	Moraceae	ლეღვი	Common fig	2 trees
Morus alba	Moraceae	თეთრი თუთა	White mulberry	2 trees
Oxalis corniculata	Moraceae	მჟაველა	Creeping woodsorrel	-
Phytolacca americana	Phytolaccaceae	ჭიაფერა	American pokeweed	-
Plantago lanceolata	Plantaginaceae	ლანცეტა მრავალძარღვა	English plantain	-
Plantago major	Plantaginaceae	მრავალძარღვა	Broadleaf plantain	-
Setaria glauca	Poaceae	ყვითელი ძურწა	Pearl millet	-
Sporobolus fertilis	Poaceae	სპორობოლუსი ინდური	Dropseeds	-
Poa annua	Poaceae	ერთწლოვანი თივაქასრა	Annual meadow grass	-
Digitaria violascens	Poaceae	მწყერფეხა	Finger-grass	-
Echinochloa crusgali	Poaceae	ბურჩხა	Barnyard grass	-
Cynodon dactilon	Poaceae	გლერტა	Vilfa stellata	-
Sieglingia decumbens	Poaceae	სიგლინგია	Heath grass	-
Eleusine indica	Poaceae	ინდური ელეუზინა	Indian goosegrass	-
Paspalum dilatatum	Poaceae	ფართო წიწიბურა	Dallisgrass	-

Polygonum nodosum	Polygonaceae	ვიწროფოთოლა წალიკა	Pale persicaria	-
Polygonum persicaria	Polygonaceae	ბოსტნის წალიკა	Lady's thumb	-
Polygonum perfoliatum	Polygonaceae	გაჩვრეტილფოთოლა წალიკა	Mile-a-minute weed	-
Polygonum convolvulus	Polygonaceae	ყანის ჭლექი	Black-bindweed	-
Rumex obtusifolius	Polygonaceae	მჟავუნა ბლაგვფოთოლა	Bitter dock	-
Rumex acetosella	Polygonaceae	კოკომჟავა	Sheep's sorrel	-
Portulaca oleracea	Portulacaceae	დანდური	Common purslane	-
Salix alba	Salicaceae	წნორი	White willow	2 trees
Verbascum blattaria	Scrophulariaceae	გულსოსანა	Moth mullein	-
Rhus javanica	Anacardiaceae	იაპონური თუთუბო	Nutgall tree	-
Datura stramonium	Anacardiaceae	ლემა	Jimsonweed	-
Physalis ixocarpa	Solanaceae	ონტკოფა	Tomatillo	-
Solanum nigrum	Solanaceae	ძაღყურძენა	European black nightshade	-
Verbena officinalis	Verbenaceae	ცოცხანა	Common vervain	-
Verbena brasiliensis	Verbenaceae	ბრაზილიური ცოცხანა	Brazilian vervain	-

Conclusion: To date no impacts caused by working activities have been observed on flora in the proximity of the working areas.

Nowadays, no one from these identified existing spices aren't doing the breeding and nestling near the project working areas. In case of any breeding and nestling period all construction works will be stopped, which may have any potential impact on them and their locations will be marked and protected.

Note:

Species indicated with * sign in above table belong to IUCN Red List (VU /IUCN near threatened).

Prepared by: Jimsher Mamuchadze Signature: _____

Prepared by: Nino Memiadze Signature: _____

8.4.5 November

Site re-entry walk over survey for preventing damage to Flora and Fauna

Batumi Costal Protection

Report #31 (November)

Location - Batumi City

Date: 8th November, 2019

This report reflects information about conducted site re-entry walk over survey on 8th November, 2019 of investigation existing Flora and Fauna terrestrial habitats. Investigation area was covered along the sea line, shown on the map below.

Please see the investigation location:

During the investigation period weather was cloudy. Investigation was conducted from 7 am to 10 pm. The investigation was conducted in the project alignment area.

There were several species of avifauna identified on the mentioned location, please see below the list of table:

Avifauna		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	10/06/2019	11/07/2019	07/08/2019	09/09/2019	09/10/2019	08/11/2019
დიდი კოკონა	Podiceps cristatus	67	-	-	-	-	1	18
მცირე კოკონა	Tachybaptus ruficollis	3	-	-	-	-	-	2

დიდი ჩვამა	Phalacrocorax carbo	14	-	-	-	3	2	3
რუხი ყანჩა	Ardea cinerea	2	-	-	-	-	-	-
დიდი თეთრი ყანჩა	Ardea alba	1	-	-	-	-	-	-
მცირე თეთრი ყანჩა	Egretta garzetta	-	1	-	1	1	1	1
ღამის ყანჩა	Nycticorax nycticorax	-	-	-	-	-	-	-
ალკუნი	Alcedo atthis	-	-	-	-	-	-	-
ქოჩორა ყვინთია	Aythya fuligula	28	-	-	-	-	-	-
ძერა	Milvus migrans	1	2	-	-	5	-	-
ჩვეულებრივი კაკაჩა	Buteo buteo	2	-	-	-	-	1	-
მელოტა	Fulica atra	4	-	-	-	-	-	-
თეთრი ბოლოქანქარა	Motacilla alba	5	12	16	18	16	5	11
სკვინჩა	Fringilla coelebs	2	3	2	3	1	-	2
ჩიტბატონა	Carduelis carduelis	-	-	-	-	-	-	-
სახლის ბეღურა	Passer domesticus	11	17	9	8	13	8	10
მინდვრის ბეღურა	Passer montanus	-	-	-	-	-	-	-
რუხი ყვავი	Corvus cornix	8	9	11	7	9	4	22
ჩვეულებრივი თევზიყლაპია	Sterna hirundo	1	-	-	-	-	1	4
ყვითელფეხა თოლია	Larus michahellis	135	30	27	45	71	16	47
ტბის თოლია	Chroicocephalus ridibundus	56	-	-	-	-	-	-
მებორნე	Actitis hypoleucos	-	-	-	-	-	-	-
მცირე წინტალა	Charadrius dubius	-	-	-	1	1	-	-
მიმინო	Accipiter nisus	-	-	-	-	2	-	-
შევარდენი	Falco subbuteo	-	-	-	-	-	-	-
ვერცხლისფერი თოლია	Larus cachinnans	-	-	-	-	-	-	-
ჩვეულებრივი ჭივჭავი	Phylloscopus collybita	-	1	-	-	-	-	-
სოფლის მერცხალი	Hirundo rustica	-	23	24	28	-	-	-
ჭინჭრაქა	Troglodytes troglodytes	-	-	-	-	-	-	-
მთის ბოლოქანქალა	Motacilla cinerea	-	-	-	-	-	-	-
ტურუხტანი	Philomachus pugnax	-	-	-	-	-	-	-
ყორანი	Corvus corone	-	3	-	2	1	-	-
გარეული იხვი	Anas platyrhynchos	-	-	-	-	-	-	15
ყვითელი ბოლოქანქარა	Motacilla citreola	-	-	-	-	-	-	-
შავშუბლა ღაჟო	Lanius minor	-	-	-	-	1	-	-
წითელთავა ყურყუმელა	Aythya ferina	-	-	-	-	-	-	7

There were several species of terrestrial mammals habitats identified on the mentioned location, please see below the list of table:

Terrestrial animals		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	10/06/2019	11/07/2019	07/08/2019	09/09/2019	09/10/2019	08/11/2019
წავი *	Lutralutra *	4	-	-	-	-	-	-
მაჩვი	Meles meles minor	7	-	-	-	-	-	-
ნუტრია	Myocastor coypus	8	-	-	-	-	-	-
ბუჩქნარის მემინდვრია	Microtus arvalis	14	-	-	-	-	-	-
მინდვრის თაგვი	Apodemus agrarius	23	-	-	-	-	-	-
ტბის ბაყაყი	Rana ridibunda	-	-	-	-	-	-	-
ვასაკა	Hyla arborea	15	-	-	-	-	-	-
ჩვეულებრივი გომბეშო	Bufo	32	-	-	-	-	-	-
მწვანე ბაყაყი	Rana esculenta	27	-	-	-	-	-	-
ჩვეულებრივი ტრიტონი	Triturus vulgaris	13	-	-	-	-	-	-
ჩვეულებრივი ანკარა	Natrix natrix	4	-	-	-	-	-	-
წყლის ანკარა	Natrix tessellata	9	-	-	-	-	-	-
კასპიის კუ	Mauremys caspica	2	-	-	-	-	-	-
ჭაობის კუ	Emys orbicularis	6	-	-	-	-	-	-
რუხი კურდღელი	Lepus europaeus	-	-	-	-	-	-	-
ჩვეულებრივი თხუნელა	Talpa europaea	-	-	-	-	-	-	-

There were several species of Flora identified on the mentioned location, please see below the list of table:

Species	Familia	Georgian Name	English Name	Number of trees
Torylis japonica	Apiaceae	ძაღლის ბირკა იაპონური	Erect hedgeparsley	-
Daucus carota	Apiaceae	ფერისცვალა	Wild carrot	-
Eryngium campestre	Apiaceae	ნარი	Field eryngo	-
Erigeron annuus	Asteraceae	ერთწლიანი ერიგერონი	Annual fleabane	-
Artemisia vulgaris	Asteraceae	მამულა	Common wormwood	-
Ambrosia artemisifolia	Asteraceae	ამბროზია	Common ragweed	-
Cirsium vulgare	Asteraceae	ნარი ჩვეულებრივი	Spear thistle	-
Crepis rhoedifolia	Asteraceae	კიჭკიჭა	Stinking hawksbeard	-
Cychorium intibus	Asteraceae	ვარდკაჭკაჭა	Common chicory	-

Lactuca seriola	Asteraceae	ღორის ქადა	Prickly lettuce	-
Sonchus oleraceus	Asteraceae	ღიჭა	Common sowthistle	-
Erigeron canadensis	Asteraceae	ცხენისკუდა	Canadian horseweed	-
Xanthium strumarium	Asteraceae	ღორის ბირკა	Rough cocklebur	-
Arctium lappa	Asteraceae	ოროვანდი	Greater burdock	-
Tagetes minuta	Asteraceae	ხავერდა	Muster John Henry	-
Anthemis euxina	Asteraceae	ირაგა ეუქსინური	Cota tinctoria	-
Bidens tripartita	Asteraceae	ორკბილა	three-lobe beggarticks	-
Leontodon danubialis	Asteraceae	ლომისკბილა	Hawkbits	-
Amaranthus albus	Amaranthus albus	ჯიჯლაყა თეთრი	Common tumbleweed	-
Chenopodium album	Chenopodiaceae	ნაცარქათამა	Lamb's quarters	-
Chenopodium ambrosioides	Chenopodiaceae	მექსიკური ჩაი	Wormseed	-
Lepidium texanum	Crucciferae	წიწმატი ველური	Peppercress	-
Lepidium sativum	Crucciferae	წიწმატი ტყის	Garden cress	-
Raphanus maritimus	Crucciferae	ზღვის ბოლოკი	Wild radish	-
Cyperus badius	Crucciferae	წამალწვრილი	Coco-grass	-
Luzula multiflora	Juncaceae	ისლურა	Common woodrush	-
Equisetum ramosissimum	Equisetaceae	შვიტა	Branched horsetail	-
Lotus corniculatus	Fabaceae	კურდღლისფრჩხილა	Common bird's-foot trefoil	-
Lespedeza striata	Fabaceae	იაპონური სამყურა	Japanese clover	-
Trifolium campestre	Fabaceae	სამყურა ველის	Hop trefoil	-
Trifolium arvense	Fabaceae	ბურტყლა სამყურა	Hare's-foot clover	-
Trifolium pratense	Fabaceae	წითელი სამყურა	Red clover	-
Prunella vulgaris	Lamiaceae	გობისცხვირა	Common self-heal	-
Mentha pulegium	Lamiaceae	ომბალო	Peppercress	-
Lythrum salicaria	Lythraceae	ცოცხმაგარა	Purple loosestrife	-
Malva neglecta	Malvaceae	ბალბა	Common mallow	-
Ficus carica	Moraceae	ლეღვი	Common fig	2 trees
Morus alba	Moraceae	თეთრი თუთა	White mulberry	2 trees
Oxalis corniculata	Moraceae	მჟაველა	Creeping woodsorrel	-
Phytolacca americana	Phytolaccaceae	ჭიაფერა	American pokeweed	-
Plantago lanceolata	Plantaginaceae	ლანცეტა მრავალძარღვა	English plantain	-
Plantago major	Plantaginaceae	მრავალძარღვა	Broadleaf plantain	-
Setaria glauca	Poaceae	ყვითელი ძურწა	Pearl millet	-
Sporobolus fertilis	Poaceae	სპორობოლუსი ინდური	Dropseeds	-
Poa annua	Poaceae	ერთწლოვანი თივაქასრა	Annual meadow grass	-
Digitaria violascens	Poaceae	მწყერფეხა	Finger-grass	-
Echinochloa crusgali	Poaceae	ბურჩხა	Barnyard grass	-
Cynodon dactilon	Poaceae	გლერტა	Vilfa stellata	-
Sieglingia decumbens	Poaceae	სიგლინგია	Heath grass	-
Eleusine indica	Poaceae	ინდური ელეუზინა	Indian goosegrass	-
Paspalum dilatatum	Poaceae	ფართო წიწიბურა	Dallisgrass	-

Polygonum nodosum	Polygonaceae	ვიწროფოთოლა წალიკა	Pale persicaria	-
Polygonum persicaria	Polygonaceae	ბოსტნის წალიკა	Lady's thumb	-
Polygonum perfoliatum	Polygonaceae	გაჩვრეტილფოთოლა წალიკა	Mile-a-minute weed	-
Polygonum convolvulus	Polygonaceae	ყანის ჭლექი	Black-bindweed	-
Rumex obtusifolius	Polygonaceae	მჟავუნა ბლაგვფოთოლა	Bitter dock	-
Rumex acetosella	Polygonaceae	კოკომჟავა	Sheep's sorrel	-
Portulaca oleracea	Portulacaceae	დანდური	Common purslane	-
Salix alba	Salicaceae	წნორი	White willow	2 trees
Verbascum blattaria	Scrophulariaceae	გულსოსანა	Moth mullein	-
Rhus javanica	Anacardiaceae	იაპონური თუთუბო	Nutgall tree	-
Datura stramonium	Anacardiaceae	ლემა	Jimsonweed	-
Physalis ixocarpa	Solanaceae	ონტკოფა	Tomatillo	-
Solanum nigrum	Solanaceae	ძაღყურძენა	European black nightshade	-
Verbena officinalis	Verbenaceae	ცოცხანა	Common vervain	-
Verbena brasiliensis	Verbenaceae	ბრაზილიური ცოცხანა	Brazilian vervain	-

Conclusion: To date no impacts caused by working activities have been observed on flora in the proximity of the working areas.

Nowadays, no one from these identified existing spices aren't doing the breeding and nestling near the project working areas. In case of any breeding and nestling period all construction works will be stopped, which may have any potential impact on them and their locations will be marked and protected.

Note:

Species indicated with * sign in above table belong to IUCN Red List (VU /IUCN near threatened).

Prepared by: Jimsher Mamuchadze Signature: _____

Prepared by: Nino Memiadze Signature: _____

8.4.6 December

Site re-entry walk over survey for preventing damage to Flora and Fauna

Batumi Costal Protection

Report #32 (December)

Location - Batumi City

Date: 8th December, 2019

This report reflects information about conducted site re-entry walk over survey on 8th December, 2019 of investigation existing Flora and Fauna terrestrial habitats. Investigation area was covered along the sea line, shown on the map below.

Please see the investigation location:

During the investigation period weather was cloudy. Investigation was conducted from 7 am to 10 pm. The investigation was conducted in the project alignment area.

There were several species of avifauna identified on the mentioned location, please see below the list of table:

Avifauna		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	11/07/2019	07/08/2019	09/09/2019	09/10/2019	08/11/2019	08/12/2019
დიდი კოკონა	Podiceps cristatus	67	-	-	-	1	18	27
მცირე კოკონა	Tachybaptus ruficollis	3	-	-	-	-	2	-

დიდი ჩვამა	Phalacrocorax carbo	14	-	-	3	2	3	53
რუხი ყანჩა	Ardea cinerea	2	-	-	-	-	-	-
დიდი თეთრი ყანჩა	Ardea alba	1	-	-	-	-	-	-
მცირე თეთრი ყანჩა	Egretta garzetta	-	-	1	1	1	1	-
ღამის ყანჩა	Nycticorax nycticorax	-	-	-	-	-	-	-
ალკუნი	Alcedo atthis	-	-	-	-	-	-	-
ქოჩორა ყვინთია	Aythya fuligula	28	-	-	-	-	-	-
ძერა	Milvus migrans	1	-	-	5	-	-	-
ჩვეულებრივი კაკაჩა	Buteo buteo	2	-	-	-	1	-	-
მელოტა	Fulica atra	4	-	-	-	-	-	-
თეთრი ბოლოქანქარა	Motacilla alba	5	16	18	16	5	11	9
სკვინჩა	Fringilla coelebs	2	2	3	1	-	2	4
ჩიტბატონა	Carduelis carduelis	-	-	-	-	-	-	-
სახლის ბეღურა	Passer domesticus	11	9	8	13	8	10	8
მინდვრის ბეღურა	Passer montanus	-	-	-	-	-	-	-
რუხი ყვავი	Corvus cornix	8	11	7	9	4	22	16
ჩვეულებრივი თევზიყლაპია	Sterna hirundo	1	-	-	-	1	4	2
ყვითელფეხა თოლია	Larus michahellis	135	27	45	71	16	47	65
ტბის თოლია	Chroicocephalus ridibundus	56	-	-	-	-	-	23
მებორნე	Actitis hypoleucos	-	-	-	-	-	-	-
მცირე წინტალა	Charadrius dubius	-	-	1	1	-	-	-
მიმინო	Accipiter nisus	-	-	-	2	-	-	-
შევარდენი	Falco subbuteo	-	-	-	-	-	-	-
ვერცხლისფერი თოლია	Larus cachinnans	-	-	-	-	-	-	-
ჩვეულებრივი ჭივჭავი	Phylloscopus collybita	-	-	-	-	-	-	-
სოფლის მერცხალი	Hirundo rustica	-	24	28	-	-	-	-
ჭინჭრაქა	Troglodytes troglodytes	-	-	-	-	-	-	-
მთის ბოლოქანქალა	Motacilla cinerea	-	-	-	-	-	-	-
ტურუხტანი	Philomachus pugnax	-	-	-	-	-	-	-
ყორანი	Corvus corone	-	-	2	1	-	-	2
გარეული იხვი	Anas platyrhynchos	-	-	-	-	-	15	20
ყვითელი ბოლოქანქარა	Motacilla citreola	-	-	-	-	-	-	-
შავშუბლა ღაჟო	Lanius minor	-	-	-	1	-	-	-
წითელთავა ყურყუმელა	Aythya ferina	-	-	-	-	-	7	6

There were several species of terrestrial mammals habitats identified on the mentioned location, please see below the list of table:

Terrestrial animals		Quantity						
Georgian Name	Scientific Name	Baseline date	Date					
		24/02/2017	11/07/2019	07/08/2019	09/09/2019	09/10/2019	08/11/2019	08/12/2019
წავი *	Lutralutra *	4	-	-	-	-	-	-
მაჩვი	Meles meles minor	7	-	-	-	-	-	-
ნუტრია	Myocastor coypus	8	-	-	-	-	-	-
ბუჩქნარის მემინდვრია	Microtus arvalis	14	-	-	-	-	-	-
მინდვრის თაგვი	Apodemus agrarius	23	-	-	-	-	-	-
ტბის ბაყაყი	Rana ridibunda	-	-	-	-	-	-	-
ვასაკა	Hyla arborea	15	-	-	-	-	-	-
ჩვეულებრივი გომბეშო	Bufo	32	-	-	-	-	-	-
მწვანე ბაყაყი	Rana esculenta	27	-	-	-	-	-	-
ჩვეულებრივი ტრიტონი	Triturus vulgaris	13	-	-	-	-	-	-
ჩვეულებრივი ანკარა	Natrix natrix	4	-	-	-	-	-	-
წყლის ანკარა	Natrix tessellata	9	-	-	-	-	-	-
კასპიის კუ	Mauremys caspica	2	-	-	-	-	-	-
ჭაობის კუ	Emys orbicularis	6	-	-	-	-	-	-
რუხი კურდღელი	Lepus europaeus	-	-	-	-	-	-	-
ჩვეულებრივი თხუნელა	Talpa europaea	-	-	-	-	-	-	-

There were several species of Flora identified on the mentioned location, please see below the list of table:

Species	Familia	Georgian Name	English Name	Number of trees
Torylis japonica	Apiaceae	ძაღლის ბირკა იაპონური	Erect hedgeparsley	-
Daucus carota	Apiaceae	ფერისცვალა	Wild carrot	-
Eryngium campestre	Apiaceae	ნარი	Field eryngo	-
Erigeron annuus	Asteraceae	ერთწლიანი ერიგერონი	Annual fleabane	-
Artemisia vulgaris	Asteraceae	მამულა	Common wormwood	-
Ambrosia artemisifolia	Asteraceae	ამბროზია	Common ragweed	-
Cirsium vulgare	Asteraceae	ნარი ჩვეულებრივი	Spear thistle	-
Crepis rhoedifolia	Asteraceae	კიჭკიჭა	Stinking hawksbeard	-
Cychorium intibus	Asteraceae	ვარდკაჭკაჭა	Common chicory	-

Lactuca seriola	Asteraceae	ღორის ქადა	Prickly lettuce	-
Sonchus oleraceus	Asteraceae	ღიჭა	Common sowthistle	-
Erigeron canadensis	Asteraceae	ცხენისკუდა	Canadian horseweed	-
Xanthium strumarium	Asteraceae	ღორის ბირკა	Rough cocklebur	-
Arctium lappa	Asteraceae	ოროვანდი	Greater burdock	-
Tagetes minuta	Asteraceae	ხავერდა	Muster John Henry	-
Anthemis euxina	Asteraceae	ირაგა ეუქსინური	Cota tinctoria	-
Bidens tripartita	Asteraceae	ორკბილა	three-lobe beggarticks	-
Leontodon danubialis	Asteraceae	ლომისკბილა	Hawkbits	-
Amaranthus albus	Amaranthus albus	ჯიჯლაყა თეთრი	Common tumbleweed	-
Chenopodium album	Chenopodiaceae	ნაცარქათამა	Lamb's quarters	-
Chenopodium ambrosioides	Chenopodiaceae	მექსიკური ჩაი	Wormseed	-
Lepidium texanum	Crucciferae	წიწმატი ველური	Peppercress	-
Lepidium sativum	Crucciferae	წიწმატი ტყის	Garden cress	-
Raphanus maritimus	Crucciferae	ზღვის ბოლოკი	Wild radish	-
Cyperus badius	Crucciferae	წამალწვრილი	Coco-grass	-
Luzula multiflora	Juncaceae	ისლურა	Common woodrush	-
Equisetum ramosissimum	Equisetaceae	შვიტა	Branched horsetail	-
Lotus corniculatus	Fabaceae	კურდღლისფრჩხილა	Common bird's-foot trefoil	-
Lespedeza striata	Fabaceae	იაპონური სამყურა	Japanese clover	-
Trifolium campestre	Fabaceae	სამყურა ველის	Hop trefoil	-
Trifolium arvense	Fabaceae	ბურტყლა სამყურა	Hare's-foot clover	-
Trifolium pratense	Fabaceae	წითელი სამყურა	Red clover	-
Prunella vulgaris	Lamiaceae	გობისცხვირა	Common self-heal	-
Mentha pulegium	Lamiaceae	ომბალო	Peppercress	-
Lythrum salicaria	Lythraceae	ცოცხმაგარა	Purple loosestrife	-
Malva neglecta	Malvaceae	ბალბა	Common mallow	-
Ficus carica	Moraceae	ლეღვი	Common fig	2 trees
Morus alba	Moraceae	თეთრი თუთა	White mulberry	2 trees
Oxalis corniculata	Moraceae	მჟაველა	Creeping woodsorrel	-
Phytolacca americana	Phytolaccaceae	ჭიაფერა	American pokeweed	-
Plantago lanceolata	Plantaginaceae	ლანცეტა მრავალძარღვა	English plantain	-
Plantago major	Plantaginaceae	მრავალძარღვა	Broadleaf plantain	-
Setaria glauca	Poaceae	ყვითელი ძურწა	Pearl millet	-
Sporobolus fertilis	Poaceae	სპორობოლუსი ინდური	Dropseeds	-
Poa annua	Poaceae	ერთწლოვანი თივაქასრა	Annual meadow grass	-
Digitaria violascens	Poaceae	მწყერფეხა	Finger-grass	-
Echinochloa crusgali	Poaceae	ბურჩხა	Barnyard grass	-
Cynodon dactilon	Poaceae	გლერტა	Vilfa stellata	-
Sieglingia decumbens	Poaceae	სიგლინგია	Heath grass	-
Eleusine indica	Poaceae	ინდური ელეუზინა	Indian goosegrass	-
Paspalum dilatatum	Poaceae	ფართო წიწიბურა	Dallisgrass	-

Polygonum nodosum	Polygonaceae	ვიწროფოთოლა წალიკა	Pale persicaria	-
Polygonum persicaria	Polygonaceae	ბოსტნის წალიკა	Lady's thumb	-
Polygonum perfoliatum	Polygonaceae	გაჩვრეტილფოთოლა წალიკა	Mile-a-minute weed	-
Polygonum convolvulus	Polygonaceae	ყანის ჭლექი	Black-bindweed	-
Rumex obtusifolius	Polygonaceae	მჟავუნა ბლაგვფოთოლა	Bitter dock	-
Rumex acetosella	Polygonaceae	კოკომჟავა	Sheep's sorrel	-
Portulaca oleracea	Portulacaceae	დანდური	Common purslane	-
Salix alba	Salicaceae	წნორი	White willow	2 trees
Verbascum blattaria	Scrophulariaceae	გულსოსანა	Moth mullein	-
Rhus javanica	Anacardiaceae	იაპონური თუთუბო	Nutgall tree	-
Datura stramonium	Anacardiaceae	ლემა	Jimsonweed	-
Physalis ixocarpa	Solanaceae	ონტკოფა	Tomatillo	-
Solanum nigrum	Solanaceae	ძაღყურძენა	European black nightshade	-
Verbena officinalis	Verbenaceae	ცოცხანა	Common vervain	-
Verbena brasiliensis	Verbenaceae	ბრაზილიური ცოცხანა	Brazilian vervain	-

Conclusion: To date no impacts caused by working activities have been observed on flora in the proximity of the working areas.

Nowadays, no one from these identified existing spices aren't doing the breeding and nestling near the project working areas. In case of any breeding and nestling period all construction works will be stopped, which may have any potential impact on them and their locations will be marked and protected.

Note:

Species indicated with * sign in above table belong to IUCN Red List (VU /IUCN near threatened).

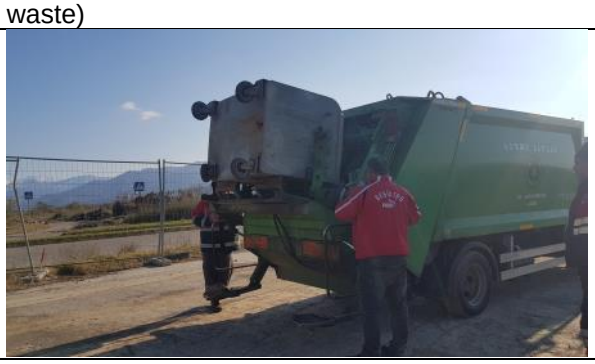
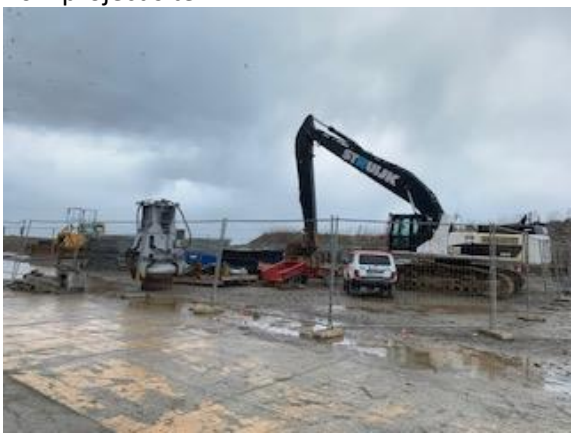
Prepared by: Jimsher Mamuchadze Signature: _____

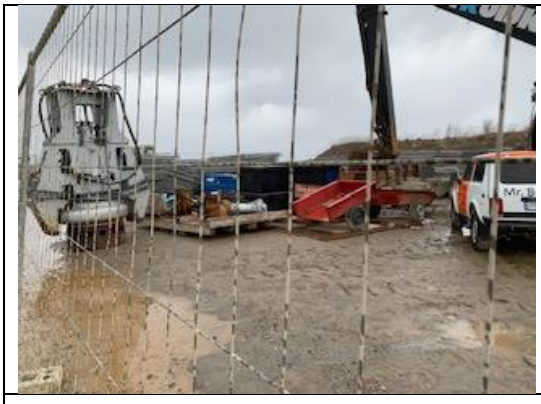
Prepared by: Nino Memiadze Signature: _____

9 PHOTOS

1 – Watering the access roads regularly	2 – Oil spill protection (Drip trey)
	
3 – Proper signage	4 – Fire extinguisher with special sign
	
5 – WC is in good condition	6 – Lifting operations manipulated with ropes
	
7 – Proper PPE (using angel grinder)	8 – Proper PPE (Pipes installation)
	

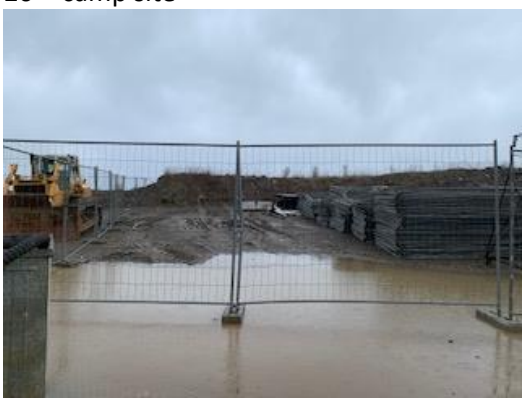
9 – Proper PPE (working on the wall grinding)	10 – The workers are using the face shields

	
11 – Proper connections of the electrical cords	12 – Municipal cleaning service (household waste)
	
13 – Noise monitoring tests provided on monthly bases	14 – Air monitoring tests provided by National Environmental Agency of Georgia
	
15 – camp site	16 – project site
	
17 – project site	18- project site



19 – camp site

20 – camp site



21 – Hazardous waste containers

22 – camp site