ENVIRONMENTAL MONITORING REPORT

Semestral report: July-December 2025

January 2026

REPUBLIC OF ARMENIA: CONSTRUCTION OF NORTH-SOUTH ROAD CORRIDOR (TRANCHE 4)

(Financed by the Eurasian Fund for Stabilization and Development)

Prepared by the “Road Department” Fund of the Ministry of Territorial Administration and Infrastructure of the Republic of Armenia for the EFSD

Contents

ABBREVIATIONS

AP	Affected Person
ADB	Asian Development Bank
BAP	Biodiversity Action Plan
CAP	Corrective Action Plan
CC	Construction Contractor
CH	Cultural Heritage
CIS	Commonwealth of Independent States
CSEMP	Contractor's Site-Specific Environmental Management Plan
DNV	Dust, Noise, Vibration
EFSD	Eurasian Fund for Stabilization and Development
ECMS	Environmental Compliance Monitoring System
ECMT	Environmental Compliance Monitoring Tracker
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMR	Environmental Monitoring Report
ENA	Electrical Network of Armenia CJSC
Engineer	Technical Supervision Consultant
EOHS	Environmental, Occupational Health and Safety
EU	European Union
GRM	Grievance Redress Mechanism
GRG	Grievance Review Group
HS	Health & Safety
HSE	Health, Safety and Environment
HSMP	Health and Safety Management Plan
MERs	Monthly Environmental Monitoring Reports
MoE	Ministry of Environmental
MoESCS	Ministry of Education, Science, Culture and Sport
MPC	Maximum permissible concentrations
MSL	Maximum sound level
MTAI	Ministry of Territorial Administration and Infrastructure
NCN	Non-Conformance Notice
NCR	Non-Conformance Report
NGO	Non-government Organization
OHS	Occupational health and safety
PPE	Personnel Protective Equipment'
PIU	Project Implementation Unit
RA	Republic of Armenia
RDF	"Road Department" Fund
RoW	Right of Way
SAEMR	Semi Annual Environmental Monitoring Report
SC	Supervision Consultant
SDA	Spoil Disposal Area
SSEMP	Site Specific Environmental Management Plan
SPS	Safeguard Policy Statement

WH	Warehouse
TLV	Threshold limit value (equivalent to sound level)
TMP	Tree Management Plan
TPC	Threshold permissible concentration
TPEME	Third party Environmental Monitoring Expert

1 INTRODUCTION

1.1 Preamble

1. This is the 7th semestral Environmental Monitoring Report (SAEMR) for Construction of North-South Road Corridor (Tranche 4) Project, which covers the reporting period from July to December 2025.

2. The report provides a description of the project implementation status and environmental monitoring activities during the reporting period.

1.2 Headline Information

3. Contract for Construction supervision of LOT 1 about 32 km road from Agarak to tunnel exit (Tranche 4) with an international consulting company Institute IGH, Joint-Stock Company for Research and Development in Civil Engineering was signed on 14 November 2023.

4. The Construction Contract between "Road Department" Fund on behalf of Ministry of Territorial Administration and Infrastructure and JV Abad Rahan Pars International Group and Tunnel Sadd Ariana was signed on 23th day of October 2023.

5. Based on Asian Development Bank (ADB) Environmental Safeguards Policy (2009), this Project falls under ADB's project Category A applied as the reference safeguards framework for the Project, as the project is considered to have potentially significant diverse impacts over a wide area during construction and operation, such as noise and vibration on local residents and potentially on cultural heritage, generation of large quantities of spoil, road safety impacts, impact on biodiversity and landscape.

6. An Environmental Impact Assessment report, in accordance to Armenian legislation, was approved by MoE and Positive conclusion of the State Ecological expertise was issued on February, 02, 2022.

7. An Environmental Compliance Monitoring System was developed at the initial stage of the project by a supervising engineer. This system includes the design and implementation of an Environmental Compliance Monitoring Tracker, which facilitates effective monitoring and reporting processes. The system has already been adopted by the contractor and used for tracking environmental compliance and corrective actions.

8. During the reporting period, routine environmental monitoring and instrumented measurements for air quality, water quality, noise, and vibration levels were conducted at identified sensitive receptor points, with monitoring responsibilities carried out by qualified subcontractors to ensure compliance and continuity in environmental parameter assessments.

9. During the reporting period, the Third Party Environmental Monitoring Expert (TPEME), Ms. Edita Vardgasyan, continued to provide independent verification of the Project's compliance with applicable Armenian environmental legislation, the approved

EIA/EMP documentation, and the safeguard requirements applicable to the Project.

10. The contractor is preparing the necessary facilities and getting the team in place to begin the project work.

11. Civil works remained ongoing during the reporting period. The main construction camp infrastructure remained operational. The additional warehouse and workshop facilities near the main camp were in use during the reporting period. The two auxiliary facilities located in Aygedzor (km 24+200) and at the former Cheese Factory site (km 31+240) remained rented and in use during the reporting period. The fuel tanks at the main construction camp received the State Technical Expertise conclusion (No. 1711) dated 22 July 2025.

12. Site-specific Environmental Management Plans (SEMPs) for the construction camps and auxiliary facilities were prepared and available on site. Their finalization and formal approval remained ongoing during the reporting period, pending the formal response from the Meghri Municipality regarding land-use permits for project-related areas located outside the Right-of-Way (RoW).

2 PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

13. The "North-South Road Corridor Investment Program" is a major investment project operating on the territory of Armenia, which aims to reconstruct a 550 km highway along the entire territory of the country, connecting China, Central Asia, India and Iran with Georgia, the Russian Federation and Europe, implemented in accordance with high international standards. Crossing the territory of Armenia from south to north (Meghri-Kapan-Goris-Yerevan-Ashtarak-Gyumri-Bavra), the transport corridor adjoins the Georgian road from the south, which continues towards the ports of Poti and Batumi (on the Black Sea) and further to Russia, countries of the CIS and the European Union. The complex project “Construction of the North-South Road Corridor” is one of the priorities for the development of the road transport network of the Republic of Armenia, and, in fact, is the reconstruction of the historical “Silk Road”. The North-South Road Corridor is also part of the AH 82 international road linking the Central Asian countries such as Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The integrated project will improve Europe-Caucasus-Asia communication at the point where Western Asia joins Eastern Europe.

14. Financing of the investment program of the transport corridor is carried out on the basis of a framework agreement on financing signed on September 15, 2009 between the Government of Armenia and the ADB. At the moment, the reconstruction and construction of the transport corridor is financed with the financial support of the ADB, as well as co-financing from the European Investment Bank (EIB) and the Eurasian Fund for Stabilization and Development (EFSD). The implementation of the project is divided into separate stages (Tranches), within which separate loan agreements are concluded for each specific Tranche.

15. The donor of the project "Construction of the North-South Road Corridor (Tranch 4)" (section from the city of Agarak to the city of Kajaran with a length of at least 32 km) (hereinafter referred to as the Project) is the Eurasian Fund for Stabilization and Development represented by the manager - the Eurasian Development Bank (hereinafter referred to as the Manager). The agreement on the provision of an investment loan from the EFSD between the Republic of Armenia and the EDB was signed on April 14, 2015.

16. The Ministry of Territorial Administration and Infrastructure of Republic of Armenia is responsible for the overall management of the Project. “Road Department” Fund (RDF) was appointed as the Project Implementation Unit (PIU) acting under the Agency Agreement signed with the Ministry of Territorial Administration and Infrastructure of Republic of Armenia.

17. The location of the project site under Tranche 4 is presented in *Figure 1* below.

Figure 1. Location of the Project site – 45 km Kajaran-Agarak road section - in countryscale

18. In Tranche 4, the section Kajaran-Agarak (section of M2 road from km 328+600 to km 384+000) is the most South one going from Kajaran city to the Iranian Border.

19. The project consists of two Lots (Lot 1 and Lot 2) for a total length of about 45 km:

- Lot 1 includes about 21 km (5km+16km) road from Agarak to Vardanidzor and about 11 km road from Vardanidzor to tunnel exit
- Lot 2 includes about 7 km road from tunnel entrance to Kajaran and about 6 km of the
- tunnel and access roads.

20. The project works include asphalt-concrete pavement (as per proposed design), with design speed 100km/h, which consists of upgrading and widening existing 2-lane road (km 379+000 – km 384+000, about 5km) and construction of completely new 2 lane single carriageway with 17 bridges, 3 tunnels, 27 culverts.

21. Expected Project implementation outcomes are.

- Increase in throughput capacity and road safety in RA
- Creation of conditions for smooth movement of trucks and passenger cars
- Improving access to sales markets, reducing logistics costs
- Increase in the transit traffic across the territory of the RA, including toward destinations in EurAsEC countries
- Creation of good traffic conditions offered to residents of adjacent communities.

2.2 Project Contracts and Management

22. Information related to the project execution is given in *Table 1*:

Table 1: Project Information

Employer	"Road Department" Fund on behalf of Ministry of Territorial Administration and Infrastructure
Funding Source	Lot1: Financed by the EFSD
Technical Supervision Consultant (Engineer)	Institute IGH, Joint-Stock Company for Research and Development in Civil Engineering
Contractor	Lot 1: JV Abad Rahan Pars International Group and Tunnel Sadd Ariana
Contract Number	No.04-CW-01
Contract date	Lot 1 23.11 2023
Commencement Date of Works	05.02.2024
Contract Period	Lot1: 1095 days
Project Completion date	Q1-2027
Expired time	0 days
Defects Notification Period	730 days

23. EFSD carries out periodic project reviews, inspections of the Project throughoutthe project cycle in conformity with the principles and requirements embodied in the ADB SPS 2009. EFSD is aid the RDF in managing the environmental impacts and risks, thuscontributing to the promotion of the long-term sustainability of investments.

24. EFSD is implementing monitoring of safeguard compliance; supervision of the project, reviewing EIA, incorporation of environmental safeguards considerations to the bidding documents and contracts and providing «no objection» to RDF for clearance to contract awards and signing/initiation of civil works to the Project.

25. The Executing Agency is the Ministry of Territorial Administration and Infrastructure of the Republic of Armenia. The Implementing Agency is the RDF, responsible for the day-to-day management of project execution and management of all environmental aspects of the projects.

26. The Contractor is executing various components of the project through the engagement of subcontractors. These subcontractors are responsible for delivering a range of services, including also civil works.

27. Contact details of EFSD, CC, Engineer and RD representatives are given in *Table 2* below:

Table 2: Environmental Staff of EFSD, RD, TPEME, Engineer and CC (status on December 2025)

Organization	Position	Name
EFSD	Senior Expert (Environmental Safeguards) Monitoring, Policy and Standards Department, Expert (Social Safeguards), Monitoring, Policy and Standards Department	Malika Babadzhanova Shushan Kurkchiyan
Client/ Borrower	Environmental Safeguard Specialist of RD	Inesa Zargaryan
	Social Specialist -RD	Shushan Kocharyan
TPEME	Independent Expert	Edita Vardgesyan
Technical Supervision Consultant (Engineer)	International Environmental Specialist	Luiza Bubashvili likabubashvili@yahoo.com Cell :595 219 141
	International Social Specialist	Mariam Begiashvili Cell +995577744088 Email: mbegiashvili2@gmail.com
	Environmental/ Health and Safety Specialist	Karine Azatyan Cell: +37493140117 Email: Kazatyan@yahoo.com
	Social Specialist	Tigran Grigoryan
	Social Specialist	Vahe Jilavyan
	Archaeology Specialist	Boris Gasparyan
Contractor	Project Manager	Moein Pooryazdankhah,
	Social Specialist	Arsen Mkrtchyan
	Archaeology Specialist	Hajk Hajdosyan
	Environmental Specialist	Ashot Kalashyan

2.3 Project Environmental Management

28. In September 2022, the RDF hired an environmental specialist, Ms. Inesa Zargaryan, whose responsibilities include the management of all environmental aspects of the project, compliance with the national environmental legislation of the RA and safeguard policies of financing donor during the preparation and implementation of the Project.

29. Additionally, an independent Environmental Monitoring Specialist, Edita Vardgesyan, has been appointed to evaluate the alignment of the project's implementation with the legal requirements outlined in the national and the donor's policies, and those specified in the EIA Report and EMP. Expert started her assignment on the date of commencement letter issued by RDF on 04.02.2025.

30. The Engineer - Institute IGH, Joint-Stock Company for Research and Development in Civil Engineering hired international and national environmental specialists: Ms. Luiza Bubashvili and Ms.Karine Azatyan. The Engineer is providing Technical Assistance to the RD in the management and reporting of the project. HSE and Archaeological specialists of the Engineer are be responsible for supervising the construction works in relation to environmental and archaeological impacts and, in particular, for supervising and reporting on the Contractor's performance in the implementation of the EMP/SSEMPs.

31. The scheme of project environmental management diagram is presented in *Figure 2* below.

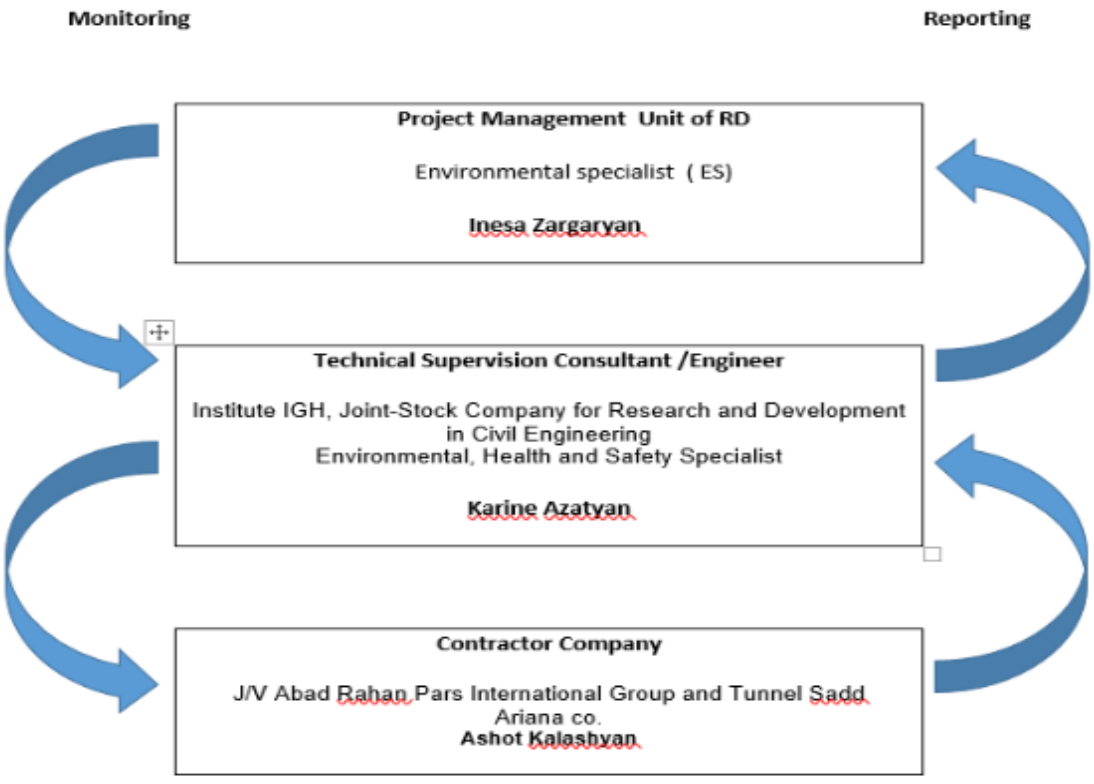


Figure 2. Project Environmental Management Arrangements

32. The TOR for the Engineer includes the following tasks for the Safeguard Specialists:

- Ensure that the provisions of the approved EMP are reflected in the Contractor's contract SEMPs prior to its acceptance by the Engineer, the Employer and EFSD and thereafter ensure that the Contractor complies in every respect with the provisions of the SEMPs;
- Develop an environmental auditing protocol for the construction period, regularly supervise the environmental monitoring, and submit the Monthly EMR and Semi-annual EMR based on the monitoring data and laboratory analysis reports.
- Monthly EMR is included as an annex to the Consultant's Monthly Progress Report;
- Develop a program for hands-on training of Contractor's staff in implementing the SEMP:

33. The Contractor shall comply with all applicable national and local environmental laws and regulations as well as applicable respective standards under the Contract.

34. The Contractor shall:

- Establish an operational system for managing environmental impacts,
- Develop the SEMPs as well as other location specific and topic specific EMPs by identifying environmental risks arising from the works, the mitigation measures to be applied and monitoring to be carried out. Implement the required mitigation measures and monitoring;
- Take any corrective or preventative actions set out in safeguards monitoring reports that the Employer will prepare from time to time to monitor implementation of the EMP/SEMP, and Submit quarterly monitoring reports to the engineer/RD as set in the EIA.

35. The Contractor is responsible for implementation of EMP/SEMP throughout the project during construction phase. The Engineer is responsible to monitor the implementation of EMP/SEMP by the Contractor at all its active construction sites and project related facilities.

36. The organizational chart for key management staff of Contractor is given below in *Table 3***.**

Table 3. The organizational chart for CC key management staff

Mr. Ali Mousavi Rahimi	Contractor's Representative
Mr. Moein Pooryazdankhah	Project Manager

2.4 Project Activities during Reporting Period

37. Construction camps and auxiliary facilities remained in operation during the reporting period to support ongoing civil works. Activities associated with these facilities included material handling and storage, concrete production, transportation of construction materials, and operation of construction equipment and machinery. Batching plant, crushing plant, and sand-washing facilities were used during periods when related construction activities were ongoing.

38. During the reporting period, civil works remained ongoing. Construction activities implemented during the period included earthworks and excavation, embankment formation, construction of bridge foundations, retaining wall works, and culvert installation at designated chainages. Tunnel excavation, blasting, and support installation works continued in the active tunnel sections, in accordance with the reported work programs and site conditions.

39. Construction works were primarily carried out in the following sections:

- Km 10+800: Blasting, excavation, and site preparation works;
- Km 12+500 – Km 12+700: Blasting, excavation, and transport of excavated material;
- Km 13+480: Blasting, excavation, and retaining wall–related foundation works;
- Km 15+800: Blasting and associated excavation works;
- Km 16+100 – Km 16+500 (Tunnel N2): Tunnel excavation, blasting, and portal stabilization works;
- Km 16+800: Excavation and embankment-related works;
- Km 18+600: Blasting and earthworks;
- Km 19+500: Blasting and excavation works;
- Km 20+900: Blasting, excavation, and earthworks;
- Km 21+500: Earthworks and site preparation activities;
- Km 34+400 – Km 34+960 (Tunnel N3): Tunnel construction works, including blasting and excavation;
- Km 35+100: Blasting and excavation works;
- Km 36+542: Culvert construction works;
- Km 36+900 – Km 37+100: Interchange embankment works and construction of Interchange No. 5;
- Km 37+100: Asphalting of the detour route and installation of traffic safety signage.
- Km 19+100: Tree planting activities conducted as part of the replanting program (approximately 7,500 seedlings).

40. The following project activities undertaken during this monitoring and reporting period are given below in *Table 4*.

Table 4. Types of executed activities.

No.	Activities Conducted	Location (km-km)	Status
1	Blasting works	Km 10+800; 12+500–12+700; 13+480; 15+800; 16+400 (TU2); 18+600; 19+500; 20+900; 21+500; 34+400; 35+100; 34+435 (TU3)	Ongoing
2	Excavation and site cleaning after blasting	Km 10+800–21+500; 34+400–35+100 22+500–25+200	Ongoing
3	Drilling, excavation, compaction, levelling, soil and topsoil removal	Km 12+000–25+200; 31+000–33+300	Ongoing
4	Tunnel N2 construction works (excavation and blasting)	Km 16+100–16+700	Ongoing- (Boring reached 380 m)

5	Tunnel N3 construction works	Km 34+430–34+960	Started- Approx. 370 m bored)
6	Foundation bridge and pier reinforcement works	Km 15+070–15+794; 16+600–18+840; 17+020–17+480; Km 35+140; 35+380; 37+100	Ongoing
7	Retaining wall foundation and construction works	Km 13+480; 14+690–14+762; Km 17+100	Ongoing (Km 17+100 completed)
8	Road embankment works	Km 18+840–22+060; 23+000–25+200; 31+000–33+300; Km 0+00-2+20 (Detour N1)	Ongoing
9	Culvert construction works	Km 36+542; various locations between km 35-37	Ongoing
10	Interchange embankment works and construction of Interchange No. 5	Km 36+900–37+100	Ongoing
11	Construction of concrete barriers	Various locations along the Project corridor; Batching plant area	Ongoing
12	Beam construction works	Bridge locations	Ongoing
13	Land preparation and tree-planting activities	Km 19+100 (Meghri Municipality)	Ongoing (7500 seedlings planted)
14	Asphalt works and installation of traffic safety signage (detour route)	Km 37+100	Completed
15	Transportation of topsoil and construction waste to approved stockpiling and dumping sites	Various approved sites	Ongoing
16	Road opening beneath the highway	Km 22+500 – Km 23+000	Completed (Dec 2025)
17	Ancillary facilities (Sand-washing & Crusher plants)	25+000 km	Operational (Pending SSEMP)

41. Summary of civil works contracts and works' progress is presented in *Table 5* below.

Table 5: Summary of Civil Works Contracts and works' progress

Package	Scope	Contractor	Signed	Approval Date		Environmental personnel		Civil Work		Progress as of Work	
				SSEMP	COVID-19 HSMP	Environmental officer	Health and Safety officer	Start (Q)	End (Q)	30 June 2025	31-December 2025
Lot 1	Reconstruction of about 21 km road from Agarak to Vardanidzor; Construction of about 11 km road from Vardanidzor to tunnel exit	J/V Abad Rahan Pars International Group and Tunnel Sadd Ariana co.	23 October 2023	Approval date 05 April 2024	Approval date 05. April 2024 (SSEMP covers these issues)	Ashot Kalashyan	Mohsen Khazan	Estimation Q1 2024	Q1 2027	19.26%	40 %

2.5 Description of Any Changes to Project Design

42. During the reporting period (July–December 2025), several technical and structural design adjustments were introduced. These changes were driven by the need for cultural heritage preservation, adaptation to challenging geological conditions in tunnel sections, and engineering optimization of bridge structures.

43. To ensure the physical integrity of the newly discovered Norashenik monument complex which includes remains of the village of Norashenik, km 32+680 – km 32+720, and the Norashenik church km 32+920 – km 32+960, the Contractor proposed a design change involving the construction of protective retaining walls. On 18 July 2025, the Ministry of Education, Science, Culture and Sports (MoESCS) issued an official non-objection (Ref. N 01/14.2/24251-2025) to these design documents, provided that all works are conducted under strict archaeological supervision.

44. Minor technical adjustments were made to several bridge designs to optimize foundation and pier parameters:

Bridge SCC V02: Adjustment of the heights for Pier 2 and Pier 3.

Bridge SCC V04: Adjustment of the height for Pier 2.

Bridge SCC V05: Rotation of the foundation for Pier P 10.

45. Structural changes were implemented for both artificial and bored tunnel sections:

- Artificial Tunnels: The design of the bottom part of the artificial tunnel sections was changed from a curved shape to a straight profile to facilitate construction efficiency.
- Tunnel N2 (Northern Section): Due to poor rock conditions and localized collapses, the excavation profile was adjusted and extended to reach a stable geological layer, ensuring the long-term safety of the structure.

46. A revised design was submitted for the relocation of high-voltage transmission towers (km 34+400–35+800). The primary objective was to adjust tower positions to avoid additional land acquisition, thereby minimizing the social impact on local communities. As of the end of the reporting period, this design update is pending formal approval from the Engineer.

47. Since these are minor design adjustments and do not result in significant changes to the project footprint, scope, or anticipated environmental and social impacts, there is no need to update the EIA/EMP.

48. The summary of all changes in the Project's design during the reporting period is presented in the *Table 6* below.

Table 6 Summary of All Changes in the Project's Design during the Reporting Period

No.	Project Component	Description of Design Change	Justification / Reason for Change	Status of Approval
1	Cultural Heritage (Norashenik)	Introduction of protective retaining walls around the church, settlement, and cemetery.	Preservation of the newly discovered Norashenik monument complex.	Approved (MoESCS Letter N 01/14.2/24251-2025)
2	Bridge SCC V02	Adjustment of the heights for Pier 2 and Pier 3.	Engineering optimization based on site-specific soil conditions.	Approved
3	Bridge SCC V04	Adjustment of the height for Pier 2 .	Engineering optimization.	Approved
4	Bridge SCC V05	Rotation of the foundation for Pier P10.	Technical refinement of structural alignment.	Approved
5	Artificial Tunnel Sections	Bottom part changed from curved shape to straight profile.	Optimization of construction methodology and structural efficiency.	Approved
6	Tunnel no. 2 (Northern Section)	Extension of excavation to reach a stable geological profile.	Adaptation to poor rock conditions and prevention of collapses.	Approved
7	High-Voltage Towers (km 34+400–35+800)	Relocation of transmission towers to revised positions.	To avoid additional land acquisition and minimize social impact.	Pending (Under review by Engineer)

2.6 Description of Any Changes to Agreed Construction methods

49. During the reporting period, no changes to the agreed construction methods were introduced.

3 ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General Description of Safeguard Activities

50. Throughout the reporting period, comprehensive environmental safeguard activities were implemented to ensure compliance with national regulations, safeguards policy requirements, applied for the Project and the project EIA/EMP and SSEMPs.

51. Contractor's Environmental Specialists conducted daily inspections of construction areas, batching plants, camps and access roads.

52. During the weekly environmental site monitoring, the Contractor's environmental specialist

checked the environmental impacts caused by the construction activities and reports on to the Engineer's EHS Specialist.

53. Engineer's EHS Specialist conducts site monitoring visits 1 – 2 times per month dependent on the project's needs and checks the compliance with the requirements of the EMP and conditions of contracts and preparing monthly Environmental reports. The Project Management and Construction Supervision's (Engineer) international environmental expert prepared Semi-annual environmental monitoring reports.

54. The method adopted for inspection include visual inspection, interview with workers and community and checking the accident records, permits obtained, daily and weekly site monitoring reports, records maintenance.

55. The Contractor engages several subcontractors to perform civil works across different project sections. Each subcontractor operates under a separate contract and is responsible for managing their own construction teams. In compliance with project requirements, each civil works subcontractor assigns a dedicated Environmental, Health, and Safety (EHS) specialist/specialists. Subcontractors are obligated to adhere strictly to the project's environmental and social standards, health and safety procedures and all relevant legal and contractual obligations. Prior to mobilization, subcontractor staff must undergo project-specific EHS induction and training to ensure awareness and compliance. Ongoing monitoring and coordination are maintained to ensure alignment with the Contractor's overall EHS management system.

56. During the reporting period the TPEME, Mrs. Edita Vardgesyan, carried out independent environmental monitoring. The primary focus of TPEME was the independent verification of the Contractor's compliance with the EMP and SSEMPs through site audits and instrumental measurements.

57. TPEME conducted intensive site visits. These visits included a detailed assessment of the archaeological protection measures at the Norashenik monument complex and the inspection of ancillary facilities, such as the camp and dumping sites.

58. In addition to site-based auditing, TPEME executed an Independent Instrumental Monitoring Program. The program included water sampling from 8 locations along the Meghri River basin (conducted on 18 June 2025) and instrumental measurements of air quality, noise, and vibration at 5 sensitive locations (conducted on 19 June 2025). The analysis, performed by an accredited laboratory, confirmed that while most parameters remained within baseline limits, specific localized exceedances in dust (PM10/PM2.5) were noted near active excavation zones, necessitating enhanced dust suppression measures. The results, which provided an independent baseline for the reporting period, were formally submitted to the RDF.

59. TPEME conducted a targeted verification visit to the tree planting area at km 19+100. The expert observed the condition of the 7,500 seedlings and the adequacy of the protective fencing, ensuring that the biodiversity mitigation measures were implemented according to the approved plan. All findings and corrective recommendations were integrated into the project's environmental safeguard documentation to ensure continuous improvement.

60. The Contractor maintained regular engagement with affected communities, and several minor grievances and site access issues were resolved in close coordination with local stakeholders and the Engineer.

61. Environmental issues identified during inspections and monitoring activities were documented through environmental monitoring checklists, inspection records, and NCRs, where applicable. Corrective actions were defined through CAPs, with follow-up actions and status updates reported in subsequent MERs and monitoring records.

62. Environmental safeguard activities during the reporting period were supported by routine reporting and documentation, including Contractor MERs, EOHS reports, monitoring checklists, CAP logs, accident and incident reports, records of joint site visits, and third-party monitoring reports. These documents collectively formed the basis for documenting safeguard-related activities and tracking environmental issues during the reporting period.

63. Archaeological supervision and safeguard-related activities continued during the reporting period in areas identified as archaeologically sensitive, regular field visits by archaeologists were conducted, toolbox talks and briefings on archaeological risks and chance-find procedures were delivered to Contractor personnel, and coordination with the Ministry of Education, Science, Culture and Sports continued in relation to protective measures and design documentation associated with cultural heritage protection.

64. During the reporting period regular meetings were conducted with residents of the communities adjacent to construction sites and the concerning issues were discussed.

65. The RDF's environmental specialists maintained high-level oversight through periodic monitoring visits and participation in joint site audits. In July 2025, a dedicated visit by the RD specialist Ms. Inesa Zargaryan focused on the critical assessment of river siltation and the Norashenik complex.

66. During the reporting period, the project was subject to monitoring by the EFSD. A significant Joint Site Mission was conducted on 7–9 July 2025, involving representatives from the RDF and EFSD. This mission focused on verifying the effectiveness of the CAPs, the status of the tree replanting program and winter preparedness. The feedback provided during this mission was instrumental in refining the project's EHS management strategies and ensuring that the Contractor addressed all high-priority environmental and safety issues.

67. The EFSD developed a three-day training aimed at increasing capacity in occupational health and safety, community health and safety, and waste management for PIUs involved in the implementation of projects financed by the EFSD and other international financial institutions. The event took place in Yerevan from December 16 to 18, 2025. Such trainings are designed to raise awareness of successful practices and provide an opportunity to discuss existing challenges.

    RDF's, Contractor's and Engineer's national environmental, health and safety specialists participated in the training.

68. Archaeological and cultural heritage supervision for the reporting period was compliant with the established Archaeological Due Diligence recommendations. No unauthorized damage to known cultural monuments was recorded, and all protective measures at Norashenik

were verified as functional.

69. Meghri municipality also was visited by the Engineer's and Contractor's Environmentalists for meeting and discussion with responsible persons. Particularly, necessity of facilitation of permits issuing process was discussed and clarified.

70. During the reporting period, operational refinements and environmental control measures were implemented to enhance compliance with the approved SSEMP and national environmental requirements. These measures represent environmental performance improvements and do not constitute formal changes to the approved construction methodology.

- The installation and operation of the sand-washing and crushing plants at km 25+000 were undertaken within the scope assessed under the approved EIA. In line with safeguard requirements, the Engineer requested submission of a site-specific SEMP and Method Statement addressing wastewater management and sediment control.
- Construction support infrastructure was reorganized by relocating the vehicle and equipment washing facility to km 25+650. The upgraded layout incorporates a concrete wastewater collection well to ensure pre-treatment of runoff prior to discharge.
- Following issuance of Level 3 NCR No. 16 in July 2025 related to river siltation, enhanced erosion control and riverbed cleaning measures were implemented to restore natural flow conditions.
- In response to elevated dust levels (PM10 and PM2.5) recorded during tunnel excavation works, additional ventilation and misting measures were introduced inside Tunnels No. 2 and No. 3 to strengthen worker protection.

3.2 Grievance Redress mechanism functioning

71. All complaints, regardless of their outcome or solutions, are properly documented in the relevant unit of the PIU or community administration and made available for review, monitoring, and evaluation purposes.

72. The Grievance Redress Mechanism (GRM) is actively functioning to receive and facilitate the resolution of concerns, complaints, and grievances related to the project's environmental performance. This mechanism is currently in use to address any complaints that may arise during the project's implementation. The GRM is designed to match the risks and potential adverse impacts of the project, ensuring that affected people's concerns are addressed promptly through an understandable, transparent, gender-responsive, and culturally appropriate process. It remains readily accessible to all affected people at no cost and without fear of retribution. Additionally, the mechanism does not restrict access to judicial or administrative remedies. The project proponent has appropriately informed the affected people about the GRM prior to the commencement of any civil works.

73. The GRM has been established and disclosed to the affected people (APs) and other stakeholders during the pre-construction public consultations. The residents are aware how to raise their complaints, if any and what the procedure is for it.

74. In the framework of grievance redress mechanism, the following activities have been carried out:
    - The contact information was presented to local community during the public consultation.
    - The grievance redress logbook and compliant redress papers are available in construction site office and community offices for the residents to file their complaints. The verbal complaints also are documented by the social safeguard specialist of the Contractor.

75. During the reporting period, the social safeguard specialist of the Contractor was available on the Contractor's site office to fix and address at his reach the raised issues by the local community, besides the site visits, as well as to ensure that the logbook and compliant redress papers are used accurately. The contact persons are appointed in each community to keep the logbooks. The Contractors' and Supervisor Engineer's specially arranged hot-line numbers were available. The contacts of key stakeholders of the project are shared also via Project Information Boards erected at the beginning and the end of the construction site.

76. These cases were reviewed on-site with the affected landowners and referred to the RDF for compensation. The affected parties were informed about the procedures and compensation is currently being processed in coordination with the LARP team.

77. During the reporting period no grievances received regarding ecology and environmental protection.

78. The procedural steps of the GRM for the Project are provided below in ***Figure 3.***

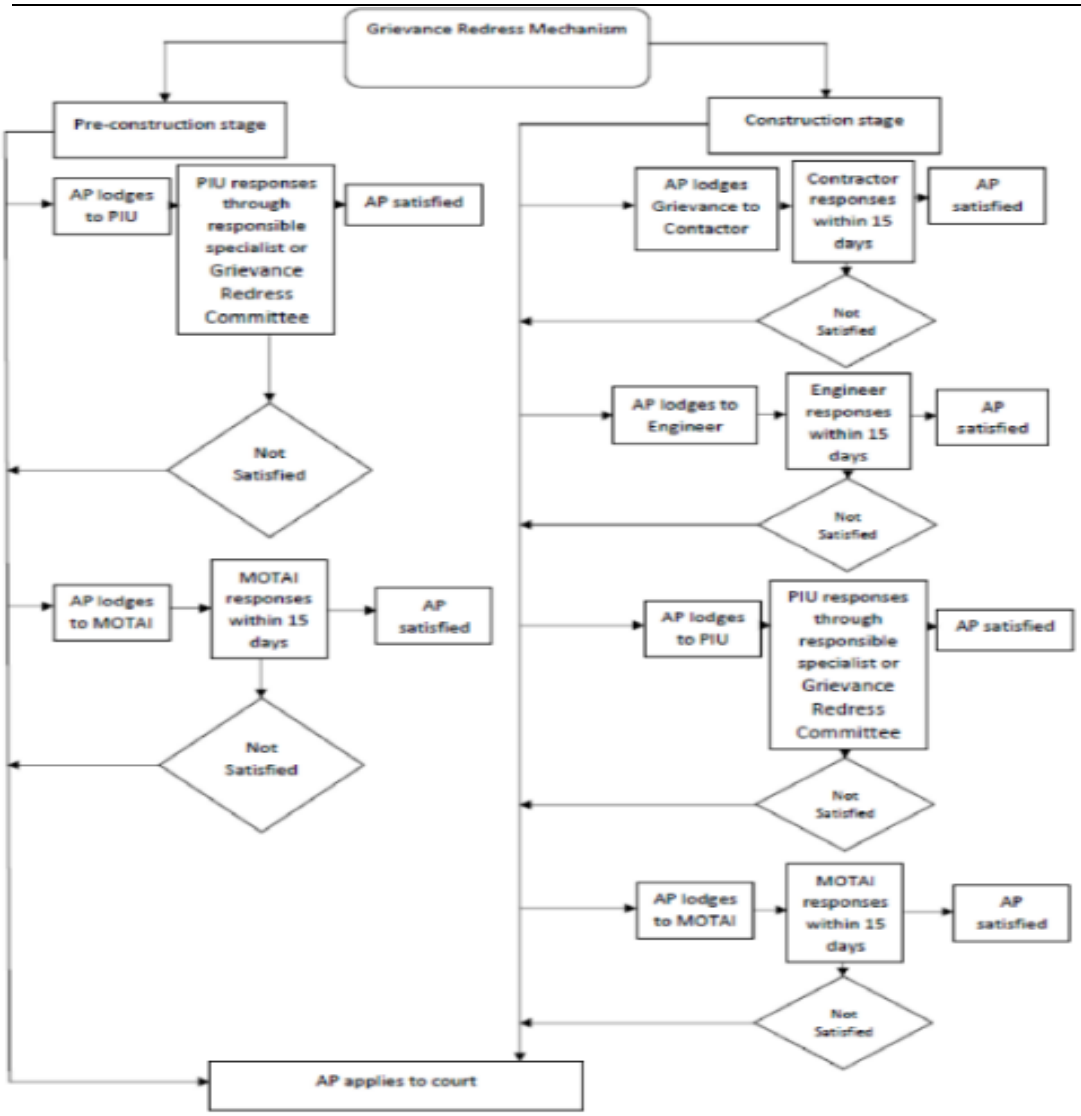


Figure 3. Scheme of Grievance Redress Mechanism for the Project

79. The following are the procedural steps to file a complaint, pose an inquiry on matters relating to project implementation, environmental concerns and other issues regarding the Project.

3.2.1. Pre-construction stage:

80. **Step 1.** The person affected by the Project could raise their suggestions/concerns/complaints first of all to the RD. The RD receives and resolve/replies the APs' grievances.

If an AP is not satisfied with the response or RD responsible staff needs additional capacity to response the APs' grievance, the Grievance Review Group (GRG) can be formed to ensure comprehensive, equitable and transparent discussion of the case. To establish legitimacy of the GRG to review and judge on the substantive merit of the AP's complaint, the composition of the GRG should be balanced and include an independent observer to ensure the impartiality and transparency of the complaint review process. The following composition of the GRG is proposed:

Members Position

- Representative of RDF Chairperson
- Representative of safeguards team (RDF) Member
- Representative of Local Government, as relevant Member
- Certified technical expert, as relevant Member
- Representative of Engineer/Contractor, as relevant Member
- Representative of the APs Member
- Independent party (for example NGO) Observer

To make for effective complaint processing, the role and responsibilities of each GRG member should be carefully elaborated and explained to them

81. **Step 2.** If AP is not satisfied with RD's decision even after GRG review of the grievance, then s/he can lodge the grievance to the RA Ministry of Territorial Administration and Infrastructure. The MTAI follows Public Administration RA law for registration, revision and resolving the case.

3.2.2. Construction Stage:

82. **Step 1.** The person affected by the Project could raise their suggestions/concerns/complaints first of all to the Contractor's dedicated grievance staff that is an attempt will be made to resolve complaints at the local level. In order to maintain transparency and accountability to affected communities and to make information, assistance and grievance resolution services accessible to the Affected Persons, the Contractor will establish the following GRM as a part of the Project's integral GRM:

    (i) AP's could approach Contractor's representative (construction foreman, engineer, social or environmental specialist) on-site and/ or register their suggestion /complain intothe grievance register book kept by Contractor at the field office established in the construction camp located nearby the RoW. The template for recording grievance, content and format of the application shall be specified in the Contractor's SEMP and agreed with Engineer.

    (ii) Contractor ensures the provision of contact information (field office location, operatinghours, names of responsible contact persons, phone numbers, regular mail and email addresses, etc.) via posters and Project informational boards.

Contractor should immediately inform the Engineer and RDF if AP lodged the grievance and should send the copy of written complaint to them. Contractor should implement appropriate mitigation measures to solve the issue and send the written response/reply to the AP with cc Engineer and RDF.

83. **Step 2.** Should the AP be not satisfied with the Contractors' solution of his/her complaint, the further opportunities are available. AP could next apply to the Engineer via lodging the complaint within one month after receiving/not receiving the response from the Contractor. The incoming suggestions/complains shall be considered and classified into environmental and social/land acquisition and resettlement items. The social/land acquisition and resettlement safeguard related complains shall be handled in the scope of

Engineer and RDF social specialists. The environmental specialists of the Engineer in collaboration with the Contractor(s) shall establish an office at the Project site where environmental complaints of Projects' AP regarding EMP and project operations' impacts can be lodged. This Project site office will be used for: supervision of construction, including monitoring of the Contractor's compliance to the EMP to ensure the mitigation measures are timely and properly implemented; disclosing all safeguard documents; and receiving and responding to the comments/feedbacks from the community. The Engineer shall respond to the complaint within 15 days.

84. **Step 3.** Should the Engineer fail to satisfy the complaint, AP could apply to RDF, MTAI and ADB. The complaint in the Construction stage at the RDF level will be preceded with the samescheme as in the pre-construction stage. All the contact information shall be provided by Contractor on posters and on the Project informational board. Contractor shall serve as an entry point in this stage and provide the necessary explanations and assistance in applicationto the mentioned entities, if needed through the personal contact with AP. Finally, the AP can always seek attention and interference of the court. However, all the effortswill be made to settle the issues at the Contractor's, the Engineer and RDF level. If not possible,attempts will be made to resolve the issues at the MTAI level to avoid/minimize litigation as much as possible.

3.3 Site Audits

85. Frequent site visits were carried out by the environmental expert of the Engineer, the Contractor, the RDF and the TPEME to ensure project compliance. These audits were performed according to the approved checklist templates, focusing on high-risk areas such as tunnel portals, batching plant, construction sites near the Meghri river and camps.

86. Joint site monitoring visits with RDF, TPEME, Contractor's, and Engineer's Environmental Specialists took place on 17–19 June 2025 to assess compliance with the EMP/SSEMP requirements. These visits formed the basis for the Quarterly Environmental Compliance Checklist (QECC) N2/2025, which was formally submitted in August 2025.

87. Independent instrumental monitoring was overseen by the TPEME in June and August 2025. Water quality sampling at 8 locations was conducted on 18 June 2025, and air, noise, and vibration measurements at 5 sensitive receptors were performed on 19 June 2025. The findings were documented in Report N1 and shared with the RDF. Air sampling for Sulfur Dioxide (SO_2) and Nitrogen Dioxide (NO_2) was implemented during the period from 06.08.2025 to 13.08.2025 at 2 points: inside the Tunnel N2 and next to the concrete batching plant. The findings were documented in Report N1 for August 2025 and shared with the RDF.

88. A Joint Supervision Mission was carried out involving representatives from the EFSD and RDF Environmental Specialists in July 2025 to assess the environmental compliance of activities on site and the progress in the works.

89. The TPEME field visit was conducted on November 18-21, 2025. Both the sections where initial road construction works are being carried out and the sections where construction works are still underway were studied for impacts on flora. Visits were also made to topsoil storage areas, sections of landfills, as well as a new nursery.

90. In November 2025 (17–19 November), a Joint Supervision Mission was carried out involving representatives from the RDF. The mission focused on verifying the effectiveness of CAPs and implementation of the Tree Replanting Program at km 19+100.

91. The following *Table 7* presents the inspections made by the project environmental safeguard staff during the current reporting period:

Table 7: Environmental Inspections Schedule for July-December 2025

No	Date	Staff
1	The expert worked remotely daily and conducted site visits 1–2 times per month within reporting period.	Engineer National Environmental, Health & Safety (H&S) Specialist – Ms. K. Azatyan
2	Weekly, daily	Contractor's Environmental Specialist – Mr. Ashot Kalashyan, Contractor's HS officer – Mr. Mohsen Khazan. Engineer's Traffic and HS Specialist - Mr. Miasnik Kazaryan,
3.	During the reporting period, the International Environmental Specialist worked remotely	International Environment Specialist- Ms. Luiza Bubashvili
4	During the reporting period, the RDF Environmental Specialist conducted a specific safeguard monitoring visits and was continuously involved in the management of environmental processes and the oversight of corrective actions	RDF Environmental Specialist – Ms. Inesa Zargaryan.
5	July 07 - 08, 2025	Joint Supervision Mission: EFSD and RD Fund representatives, accompanied by the Engineer and Contractor's EHS teams
6	September 10 - 12, 2025 November 17–19, 2025	Joint Supervision Mission: RDF, accompanied by the Engineer and Contractor's EHS teams Implementation of 7500 saplings planting.
6	June 17 - 19, 2025 August 12 - 13, 2025; October 23 - 25, 2025	TPEME – Ms. Edita Vardgesyan. Verification visit to all construction, construction waste and topsoil dumping sites, as well as camps areas to evaluate safeguard compliance. Site visit to monitor status of flora at all construction sites, as well as to the tree planting site at km 19+100 to inspect the condition of 7,500 seedlings and protection fencing.
7	07-08.07.2025 2025- Year-end	Joint Follow-up Visit: RDF and EFSD specialists accompanied by Engineer's and Contractor's specialists. Consultations and training session for interested parties of the Project.

92. The inspections method included visual observations of all active construction sites, interviews with workers and local community members, and a thorough review of documentation, including accident records, permits obtained, and daily and weekly quality control reports.

93. Monitoring also involved the verification of instrumental measurement results for air, water, and noise, as well as the tracking of CAPs to ensure that previously identified non-compliances were addressed.

94. During the reporting period, a total of 74 findings were identified during site monitoring visits. These findings are summarized and tracked through the CAP log table presented in **Annex 5**. The CAP log provides detailed information on the nature of each observation, required mitigation measures, responsible parties, deadlines and current implementation status.

95. During the reporting period 6 non-conformance notifications were issued with different priority levels. Additional minor non-compliances were recorded in monthly audit checklists and were addressed accordingly.

96. To ensure continuity in tracking environmental compliance, *Table 8* summarizes the implementation status of corrective actions for non-conformities identified in the previous monitoring period (January-June 2025).

97. Identified 6 non-conformities with EMP and SSEMP requirements, along with corrective actions and the status of actions for the report covering the period of July-December 2025 are presented in *Table 9*.

98. Corrective actions for observations/non-conformities identified during Donor's visit on 07.07.2025- are presented in *Table 10*.

Table 8: Implementation status of corrective actions for non-conformities identified in the previous monitoring period (January-June 2025).

ID #	Location	Date	Issue	Priority	Mitigation Required	Target dates	Corrective Actions	Status of Action
1	Km 16+500, tunnel construction	29.01.2025	Contamination of soil, underground and surface water by runoffs while constructing tunnel No 2 at km 16+500	High	The well to collect wastewater originated during tunnel drilling works should be collected in the well, as was approved by the Engineer in the method statement submitted by the Contractor. However, this well was not constructed and currently all runoffs are spilled on the ground contaminating the soil and groundwater, as well as – the surface water.	28.02.2025	1. Construct the well 2. Send the soil and river water for analysis 3wastewater will not be discharged but rather used in Jumbo drills. 4. Results of water quality sampling of which was done from the sedimentation well No2 and cistern were got- better than from the well No1, but still not good. 5. As the wastewater at this stage is not discharged into environment NC is proposed for conditional closing,	Drainages and plastic tanks for sedimentation are installed. Soil and water from the first tank were sent for analysis. 10.06.2025 – Closed conditionally
2	Km 16+500, tunnel construction	21.02.2025 Re-opened: 14.03.2025 Formal letter sent – 18.03.2025	High-voltage cable erected in the tunnel for the tunnel construction purposes is damaged in multiple sites and temporarily repaired by the application of the insulating tape	High	Cable to be fully replaced by the new one.	25.02.2022 20.03.2025	Cable was replaced to be replaced, however during site monitoring visit it became clear that it was just repaired – insulated, after which the Tunnel's Specialist of the Engineer revealed again the damaged parts. NC was re-opened.	Closed-, then re-opened based on non-correct evidence submission The new CAP is submitted and implemented. NC is closed 24.03.2025
3	Km 16+500, tunnel construction	21.02.2025	Ventilation is not installed in tunnel already bored by 12m in deep.	High	Proper ventilation system shall be purchased and installed. Air quality instrumental measurements shall be implemented twice a day and after each blasting. Records to be maintained. Contractor shall maintain at all times a reasonable distance between the end of the ventilation pipe and the face of the	15.03.2025 13.03.2025	The ventilation system is purchased and installed. Verified during site visit of 13.03.2025 Air quality is checking regularly; ventilation system's operability and safety checks- weekly.	Ventilation is erected. Air quality is monitored. Weekly checklist of ventilation system is approved and monitoring is implementing . Closed -24.03.2025

					excavation, in order to provide clean air at the working front			
4	Km 38+400	15.03.2025	Topsoil was not arranged in wide piles but rather spread flat and vehicles are passing over – it is polluted by construction and domestic waste and vehicles'' leakages.	Medium	Subcontractor managing the site shall collect, clean up the topsoil and arrange its storage in wide piles starting from the end of depot site. Access road to transport and dump the topsoil should be implemented in way that vehicles don't travel over the topsoil piles.	10.04.2025	1. Immediately stop the site exploitation. 2. Plow up the compacted soil with grader and remove stones and roots with the help of small loader 3. To pull the topsoil to the end of the depot, making 2 m height stockpiles 4. To prepare a road access scheme for further treatment 5. To keep a log-book 6. To implement regular everyday compliance monitoring	Closed Big stones were installed and slop of topsoil pile on the side directed to the underground water well originated on site was leveled to prevent erosion. All CAPs are implemented.
5	Km 25+680, fuel tanks storage next to Batching Plant area	15.03.2025	Wholeness of Containment vessel around fuel tank was broken	Medium	The door opened in the containment vessel broken the integrity of it and now it is not served the purposes it was installed for: in case of spill the fuel will not be collected in vessel but rather will be spilled and contaminate the area around, creating fire and HS risk.	10.04.2025	1. Restore the wholeness of the containment vessel 2. Train personnel involved on Spill prevention management.	Closed- 26.04.2025 Wholeness of vessel was restored – 15.03.2025 Training was implemented
6	Km 37+100, Observation Notice of violation of fall protection norms	17.04.2025	Km 37+100 – works at height, scaffolding- the bridge to reach the scaffolding planform is not supported with hand rails, It is just narrow board.	High	Necessity to ensure safety of temporary bridges, passes, particularly, while constructing the bridges. All bridges shall be supported with hand railing	19.04.2025 30.05.2025	Contractor informed on adjustment of hand railing on this particular temporary bridge. Checklist of other working sites was submitted with implemented CAPs and approved by the Traffic and HS Engineer on site.	Closed- 11.06.2025

Table 9: Identified non-conformances (July-December 2025)

ID #	Location	Date	Issue	Priority	Mitigation Required	Target dates	Corrective Actions	Status of Action
1	Km 19+100- Violation of works at height safety, rated as level 2.	09.07.2025	No proper scaffolding was implemented: platforms were not properly fixed. The width of platform was not sufficient to ensure stable standing; additional intermedial railing was not erected; safety harnesses was not applied by workers. No fixed ladders were installed and one worker was climbing at re-enforcement steel without observance of safety rules.	High	Works were immediately suspended until fixing the problems. Preparation of checklist for daily scaffolding and works at height safety rules observance at all construction sites is requested.	10.07.25- for very this site; 31.07.2025- for all sites	Contractor submitted the checklist for daily monitoring of scaffolding. Some measures were implemented but not in full. Several improper scaffoldings were noted during site visits and shown on daily site reports by the Engineer's supervisors. NC was issued under No 17. Closing out report was verified by the Engineer during September 2025. NC No 17 and thus, NC 15 was closed.	Closed- 29.09.2025
2	Re-issuing of NCs No 4, 5, and 8 – level 3.	16.08.2025	Rivers pollution with construction waste – all working sites next to the river's banks The most critical sites: km 12+200 – km 12+500; Km 13+300 – km 13+500; Km 19+420.	High	Immediate implementation of the CAPs, submission of the work program is requested. Deadline for submission of detailed corrective actions plan with exact timetable for the actions foreseen – 30.08.2025.	20.10.2025 – for the most problematic sites; For others- day-to-day actions	The cleaning works commenced from km 11+960 and, as of 27.08.2025, had progressed up to km 12+120. The works are on-going at all other sites as well.	open
3	Re-issuing of the NC No 15, level 3	18.08.2025	Violation of safety rules on works at height improper scaffolding	High	Training on the requirements on works at height, scaffolding, ladders and safe access was provided by the Engineer's EHS on 12.08.2025. Scaffolding checklists submission – weekly; photo-reports from work	30.08.2025	Contractor has informed on the implementation of the CAPs on 21.08.2025.	Closing out report is submitted. To be verified during site monitoring.

					sites- weekly. Proper implementation of scaffolds, fixed ladders with handrailing; all staff - wearing of full body harnesses.		Filled checklists are being submitted weekly together with photo-reports.	Verified during September, 2025 - Closed
4	Km 25+000, level	16.09.2025	Crushing plant is erected without getting environmental permits as required by the RA legislation.	Medium	1.Method Statement for crushing plant operation to be submitted and approved by the Engineer. 2.River water usage and wastewater (WW) discharge permits to be got. 3.Sample of wastewater at the discharge point to be sent for analysis. 4.Air pollution permit should be got. 5.Contractor shall implement drainages to collect water runoffs from the sand washing and direct them into the sedimentation well. 6.Contractor shall cover the territory with gravel - area is not accessible due to intensive mud.	1. 30.09.2025 2. 31.10.2025 3. When the 4th well is full 4. 15.10.2025 5. 30.09.2025 6. 15.10.2025	1. On-going 2. Application is in process 3. 4th well is empty 4. Not requested yet 5. Implemented 6. Partly done	Open
5	Km 34+500, TU3	26.10.2025	Dust level in TU3 and EMP procedure violation	High	In the event of any interruption of the ventilation or lighting inside the tunnel, the Contractor shall immediately evacuate all personnel from the tunnel area without delay. Due diligence of dust level in tunnel to be implemented and submitted with proposal of the most efficient mitigation measures for dust suppression.	As soon as electricity supply is interrupted. 31.10,2025	1. Conduct 24-hour air-quality monitoring in TU3 under different operational conditions (with/without ventilation, after blasting, after spraying); analyze PM_{10}/$PM_{2.5}$ data, implement corrective actions (ventilation restoration, dust suppression), repeat measurements; compile and submit Air Due Diligence Report summarizing findings and improvements. -done, approved 2. Prepare and implement a TU3 Ventilation and Power-Outage Emergency plan covering: immediate work stoppage, personnel evacuation routes and responsibilities, backup power or lighting, communication with the	Open

							Engineer; conduct briefing to all tunnel workers. -evacuation drill was done 3. Contractor shall acquire full face protection masks with No 2 or 3 filters open	
6	Km 34+400, TU3	18.12.2025	Violation of works at height safety rules: personnel lifting in confined space, TU3. 2 persons were injured	High	1. All confined space operations need issuing of work permit with preliminary risk assessment of the working site. 2. The working instruction on personnel lifting to be drafted and sent for Engineer's approval. 3. Proper personnel lifting equipment shall be acquired.	ASAP	CAP is not submitted	Open

Table 10: Corrective actions for observations/non-conformities identified during Donor's visit on 07.07.2025

N	Observation/non-conformity	Corrective action	Responsible person	Deadline	Status
1	Spill traces at dumping site 16+400 and in the main camp	Collect all contaminated soil, place it in sealed bags, and transfer to a designated hazardous waste storage area. Ensure all machinery is well-maintained and free of leaks. Use spill containment pallets under stationary machinery.	A. Kalashyan	30.08.2025	Closed. Contaminated soil was removed and transferred to the hazardous waste storage area. Maintenance checks were intensified to prevent further leaks.
2	Lack of waste bins for various types of waste	Install an adequate number of labeled waste bins for segregation (e.g., plastic, metal, organic, oily rags). Ensure bins are durable, covered, and placed at strategic locations.	A. Kalashyan, M. Khazan	30.08.2025	Closed. Labeled bins for waste segregation were installed at the camp and active construction sites
3	Unsafe scaffolding setup and risky worker actions observed	Ensure scaffolding to meet OSHA (or national equivalent) standards. Ensure scaffolding is plumb, properly braced, with guardrails and toe boards. Conduct general safety training, toolbox talks on scaffolding safety and implement a daily inspection checklist. . Ensure all workers on scaffolding are anchored and wear full body harnesses. Ensure safe access to the decks (fixed ladders, temporary bridges).	M. Khazan	30.08.2025	Closed. This was addressed through targeted training and the implementation of a daily scaffolding checklist. Measures were verified during subsequent site audits.

4	Sign board near fuel tankers	Install a clear, weather-resistant safety signboard and warning signs (flammable, smoking prohibited, etc.) near fuel tankers	A. Kalashyan, M. Khazan	31.07.2025	Closed. Signboards were installed; however, further improvements were made to increase visibility and size following Engineer feedback.
5	Lack of fire extinguisher near the shelter at km 37+100	To ensure fire extinguisher is in place at km 37+100	M. Khazan	20.07.2025	Closed. A fire extinguisher was provided and verified at the specified location.

3.4 Issues Tracking

99. Description of issues tracked during the reporting period is given in the ***Figure 4***

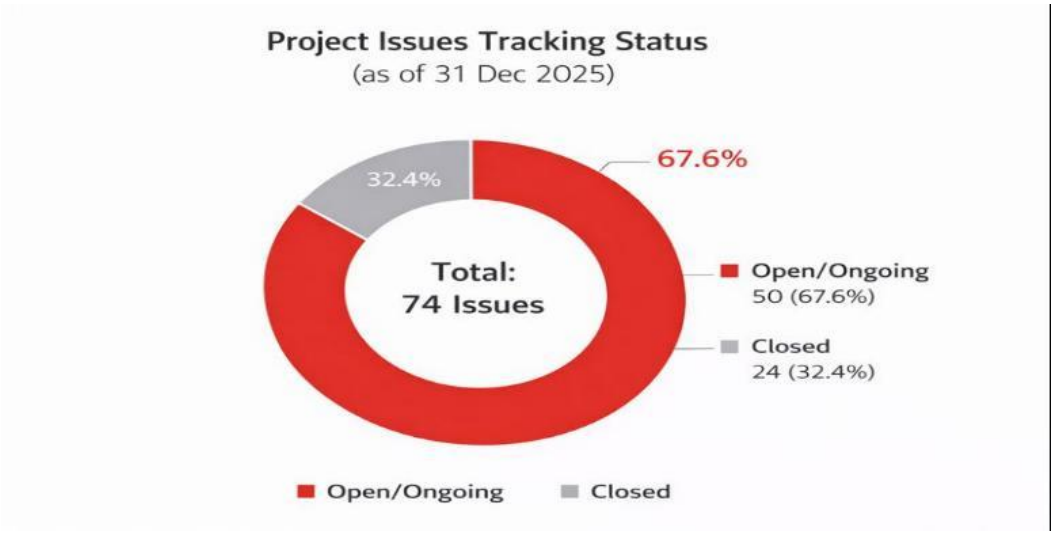


Figure 4 -Summary of issue tracking during the project up to July-December 2025

3.5 Trends

100. Most of the violations observed during the reporting period that required special attention were related to river protection measures and occupational health and safety issues. NCRs were issued to the Contractor to address these issues through corrective actions. Corrective measures were progressively implemented, and, following the Engineer's observations, the Contractor undertook the necessary actions and applied mitigation measures to address the identified non-compliances.

101. An improvement was observed in the quality and timeliness of submitted environmental documentation, including environmental reports, EMP and SEMP updates, and CAP logs. This improvement reflects enhanced coordination between the Contractor's HSE team and the Supervising Engineer.

102. A high-level environmental NCR related to river pollution was identified during the period, indicating increased sensitivity of works conducted in proximity to watercourses. While corrective actions were initiated, the NCR remained open as of the end of December 2025, highlighting the need for continued attention to river protection measures.

3.6 Unanticipated Environmental Impacts or Risks

103. No any unanticipated environmental impacts were observed during the reporting

period.

3.7 Cultural Heritage and Archaeological Supervision

104. Environmental and archaeological safeguard activities were maintained through a multi-tiered monitoring framework. The Contractor engaged a specialized subcontractor, Econom Eco LLC, to provide archaeological consultancy services and continuous field supervision. Institutional oversight was supported by daily inspections from the Contractor's specialists and monthly monitoring visits by the Engineer's Archaeologist and HSE team. Independent verification was provided by the TPEME and RDF specifically through joint site visits.

105. During the reporting period, the MESCS of the Republic of Armenia approved plans for the construction of protective walls for two cultural heritage sites (the remains of the village of Norashenik, km 32+680 – km 32+720, and the Norashenik church, km 32+920 – km 32+960), as well as a plan of historical and cultural measures aimed at preserving the integrity and historical and cultural value of two monuments (Site 013, km 24+900–km 25+200, and Site 018, km 31+100–km 31+400).

106. This design received a formal non-objection from the MESCS on July 18, 2025 (Ref. N 01/14.2/24251-2025) on the condition that all works proceed under strict, ongoing archaeological supervision (please see Annex 3).

107. The contractor entered into an agreement with a specialized organization, which carried out the works fixed by the plan in December within the specified area (the sites were documented through measurements, drafting, and aerial photography).

108. Archaeological risk management was integrated into the project's training regime. Toolbox talks and briefings specifically focused on archaeological risks and "Chance Find" procedures were delivered to Contractor and subcontractor personnel. Furthermore, all subcontractor staff were required to undergo project-specific archaeological training prior to work.

4 RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted during the reporting period

109. During the reporting period instrumental measurements and monitoring of environmental parameters of air quality, noise, vibration levels, water, and soil and air quality for gas emissions were undertaken.

110. The baseline data collection for air and water quality, noise and vibration level was done by Contractor in May 2024.

111. Instrumental measurements and monitoring of environmental parameters (air quality, water quality, noise, and vibration levels) during this reporting period has been implemented at the sensitive receptors' points.

112. The subcontractor, “ATMS Solutions LLC,” a qualified and licensed company, continues to perform instrumental measurements of dust concentration, noise, and vibration (DNV) levels at sensitive receptor points.

113. The subcontractor, “Hydrometeorology and Monitoring Center” SNCO, a qualified and accredited national agency, continues to conduct instrumental monitoring of water, soil, and air quality across designated locations within the project corridor. Monitoring activities include regular sampling and laboratory analysis of surface water and wastewater, testing of soil quality in potentially affected zones, and air quality measurements (PM2.5, PM10, NO_2, SO_2) near sensitive receptors.

114. In addition to the Contractor's monitoring, the TPEME, supported by the independent laboratory "Green Time" LLC, conducted independent instrumental measurements and site audits during the reporting period (specifically in July and August 2025).

115. The TPEME's monitoring serves as an external verification of the Contractor’s environmental performance. These independent audits included measurements of air quality, noise, and vibration at selected sensitive receptors, as well as comprehensive water quality analysis of the Meghri River.

116. The results obtained by the TPEME generally correlated with the Contractor's findings, providing a high level of confidence in the overall environmental data.

4.1.1 Air quality

117. During the reporting period (July–December 2025), instrumental air quality monitoring (dust) was carried out at selected sensitive receptor points and, where applicable, inside Tunnel No. 2 and Tunnel No. 3. The monitoring results generally confirmed that PM2.5 and PM10 concentrations at open-air sensitive locations remained below the applicable maximum permissible concentrations (MPCs) established by RoA Government Decree No. 160-N. A minor exceedance of the daily average limit for PM2.5 was recorded in July 2025 at one monitoring point (Point 7-DNV), while PM10 remained within the applicable limits and the remaining locations complied with the daily average and MPC values.

118. In August 2025, increased dust concentrations were recorded inside Tunnel No. 2 and Tunnel No. 3, where PM2.5 and PM10 exceeded the daily average limits by approximately 2–3 times and 1.5–2 times, respectively. This triggered recommendations for strengthened tunnel dust control measures and enhanced monitoring arrangements during active tunnel works.

119. September 2025 results demonstrated full compliance with both daily average and MPC values at all monitored points, including no exceedance of baseline levels. In October 2025, dust levels remained compliant with the applicable limits; however, a localized increase was recorded at DNV Point 4 (Meghri community), which was reflected as a deviation from baseline values.

120. In November and December 2025, the monitoring results indicated a general increase of PM2.5 concentrations above daily average limits at several locations while remaining below MPCs, and continued exceedance of baseline values across the monitoring network. The most significant

non-compliance was recorded in December 2025 inside Tunnel No. 3, where PM2.5 and PM10 exceeded both the daily average and MPC values by 7.65 and 5.2 times, respectively. Overall, the findings indicate that dust impacts in open-air environments remained manageable and largely compliant with national requirements, while tunnel environments (particularly Tunnel No. 3) require strengthened dust suppression and ventilation control measures, as well as stricter management of occupational exposure during active works.

121. In addition to the Contractor's routine dust monitoring, independent environmental compliance inspections identified dust emissions as a recurring management issue in certain road sections, particularly near sensitive receptors. Visually excessive dust emissions were observed next to residential areas (e.g., Km 21+115), which was also confirmed by independent instrumental measurements. As a corrective action, the Contractor was instructed (through the Engineer) to ensure continuous availability of water trucks and to intensify regular watering of active work sites, with particular focus on locations adjacent to residential receptors. In addition, the Contractor was required to ensure that all trucks transporting construction materials are equipped with and use appropriate covers when entering public roads, in order to prevent fugitive dust dispersion and secondary dust generation.

122. The tables below present the air quality monitoring results for the period of July, August, September, October, November, and December 2025, compared against the threshold limits established by the legislation of the Republic of Armenia.

Table 11 A: The results and average values of dust (PM2.5 and PM10) instrumental measurements at selected sensitive points- July 2025

Measurements		Dust actual concentration, mg/m³ 29.07.2025	Dust concentration, mg/m³	Maximum permissible concentration (MPC) for dust, mg/m³	
			Baseline data of 16.03.2024	Daily average	Maximum value
Point 3-DNV (km 35+560)					
Average value	PM2.5	0.034	0.014	0.035	0.16
	PM10	0.035	0.015	0.06	0.3
Point 7-DNV (km 25+190)					
Average value	PM2.5	0.036	0.011	0.035	0.16
	PM10	0.044	0.012	0.06	0.3
Point Batching plant (km 25+680)					
Average value	PM2.5	0.033	-	0.035	0.16
	PM10	0.041	-	0.06	0.3
Point 9-DNV (km 19+260)					
Average value	PM2.5	0.03	0.008	0.035	0.16
	PM10	0.033	0.009	0.06	0.3
Point 10-DNV (km 17+000)					

Average value	PM2.5	0.03	0.012	0.035	0.16
	PM10	0.034	0.014	0.06	0.3
Point 14-DNV (km 23+100)					
Average value	PM2.5	0.028	0.009	0.035	0.16
	PM10	0.03	0.011	0.06	0.3
Point 16-DNV (Km 20+460)					
Average value	PM2.5	0.031	0.015	0.035	0.16
	PM10	0.038	0.015	0.06	0.3
Point 17-DNV (Km 36+960)					
Average value	PM2.5	0.032	0.007	0.035	0.16
	PM10	0.037	0.008	0.06	0.3
Point 18-DNV (Km 34+480)					
Average value	PM2.5	0.029	0.009	0.035	0.16
	PM10	0.033	0.009	0.06	0.3

Table 11 B: The results and average values of dust (PM2.5 and PM10) instrumental measurements at selected sensitive points- August 2025

Measurements		**Dust actual concentration, mg/m³ 22.08.2025**	**Dust concentration, mg/m³**	**Maximum permissible concentration (MPC) for dust, mg/m³**	
			Baseline data of 16.03.2024	**Daily average**	**Maximum value**
Point 7-DNV (km 25+190)					
Average value	PM2.5	0.009	0.011	0.035	0.16
	PM10	0.009	0.012	0.06	0.3
Point Batching plant (km 25+680)					
Average value	PM2.5	0.013	-	0.035	0.16
	PM10	0.015	-	0.06	0.3
Point 9-DNV (km 19+260)					
Average value	PM2.5	0.009	0.008	0.035	0.16
	PM10	0.009	0.009	0.06	0.3
Point 10-DNV (km 17+000)					
Average value	PM2.5	0.01	0.012	0.035	0.16
	PM10	0.011	0.014	0.06	0.3
Point 14-DNV (km 23+100)					
Average value	PM2.5	0.011	0.009	0.035	0.16
	PM10	0.011	0.011	0.06	0.3
Point 16-DNV (Km 20+460)					

Average value	PM2.5	0.014	0.015	0.035	0.16
	PM10	0.015	0.015	0.06	0.3
Point 17-DNV (Km 36+960)					
Average value	PM2.5	0.011	0.007	0.035	0.16
	PM10	0.011	0.008	0.06	0.3
Point 18-DNV (Km 34+480)					
Average value	PM2.5	0.01	0.009	0.035	0.16
	PM10	0.011	0.009	0.06	0.3
Point TU2					
Average value	PM2.5	0.103	-	0.035	0.16
	PM10	0.116	-	0.06	0.3
Point TU3					
Average value	PM2.5	0.072	-	0.035	0.16
	PM10	0.095	-	0.06	0.3

Table 11 C: The results and average values of dust (PM2.5 and PM10) instrumental measurements at selected sensitive points- September 2025

Measurements		**Dust actual concentration, mg/m³ 23.09.2025**	**Dust concentration, mg/m³**	**Maximum permissible concentration (MPC) for dust, mg/m³**	
			Baseline data of 16.03.2024	**Daily average**	**Maximum value**
Point 7-DNV (km 25+190)					
Average value	PM2.5	0.003	0.011	0.035	0.16
	PM10	0.004	0.012	0.06	0.3
Point Batching plant (km 25+680)					
Average value	PM2.5	0.005	-	0.035	0.16
	PM10	0.005	-	0.06	0.3
Point 9-DNV (km 19+260)					
Average value	PM2.5	0.005	0.008	0.035	0.16
	PM10	0.005	0.009	0.06	0.3
Point 10-DNV (km 17+000)					
Average value	PM2.5	0.004	0.012	0.035	0.16
	PM10	0.008	0.014	0.06	0.3
Point 14-DNV (km 23+100)					
Average value	PM2.5	0.005	0.009	0.035	0.16
	PM10	0.005	0.011	0.06	0.3

Point 16-DNV (Km 20+460)					
Average value	PM2.5	0.006	0.015	0.035	0.16
	PM10	0.008	0.015	0.06	0.3
Point 17-DNV (Km 36+960)					
Average value	PM2.5	0.002	0.007	0.035	0.16
	PM10	0.002	0.008	0.06	0.3
Point 18-DNV (Km 34+480)					
Average value	PM2.5	0.003	0.009	0.035	0.16
	PM10	0.003	0.009	0.06	0.3

Table 11 D: The results and average values of dust (PM2.5 and PM10) instrumental measurements at selected sensitive points- October – 2025

Measurements		**Dust actual concentration, mg/m³** 06.10.2025	**Dust concentration, mg/m³**	**Maximum permissible concentration (MPC) for dust, mg/m³**	
			Baseline data of 16.03.2024	**Daily average**	**Maximum value**
Point 4-DNV (km 33+880)					
Average value	PM2.5	0.06	0.011	0.035	0.16
	PM10	0.068	0.011	0.06	0.3
Point 7-DNV (km 25+190)					
Average value	PM2.5	0.017	0.011	0.035	0.16
	PM10	0.017	0.012	0.06	0.3
Point Batching plant (km 25+680)					
Average value	PM2.5	0.017	-	0.035	0.16
	PM10	0.018	-	0.06	0.3
Point 9-DNV (km 19+260)					
Average value	PM2.5	0.015	0.008	0.035	0.16
	PM10	0.016	0.009	0.06	0.3
Point 10-DNV (km 17+000)					
Average value	PM2.5	0.018	0.012	0.035	0.16
	PM10	0.02	0.014	0.06	0.3
Point 14-DNV (km 23+100)					
Average value	PM2.5	0.014	0.009	0.035	0.16
	PM10	0.016	0.011	0.06	0.3
Point 16-DNV (Km 20+460)					
Average value	PM2.5	0.013	0.015	0.035	0.16
	PM10	0.013	0.015	0.06	0.3

Point 18-DNV (Km 34+480)					
Average value	PM2.5	0.014	0.009	0.035	0.16
	PM10	0.015	0.009	0.06	0.3
Average value	PM2.5	0.002	0.007	0.035	0.16
	PM10	0.002	0.008	0.06	0.3
Point Crusher (Km 25+000)					
Average value	PM2.5	0.02	-	0.035	0.16
	PM10	0.02	-	0.06	0.3

Table 11 E: The results and average values of dust (PM2.5 and PM10) instrumental measurements at selected sensitive points- November 2025

Measurements		**Dust actual concentration, mg/m³ 20.11.2025**	**Dust concentration, mg/m³**	**Maximum permissible concentration (MPC) for dust, mg/m³**	
			Baseline data of 16.03.2024	**Daily average**	**Maximum value**
Point 4-DNV (km 33+880)					
Average value	PM2.5	0.042	0.011	0.035	0.16
	PM10	0.054	0.011	0.06	0.3
Point 7-DNV (km 25+190)					
Average value	PM2.5	0.038	0.011	0.035	0.16
	PM10	0.046	0.012	0.06	0.3
Point Batching plant (km 25+680)					
Average value	PM2.5	0.043	-	0.035	0.16
	PM10	0.018	-	0.06	0.3
Point 9-DNV (km 19+260)					
Average value	PM2.5	0.038	0.008	0.035	0.16
	PM10	0.049	0.009	0.06	0.3
Point 14-DNV (km 23+100)					
Average value	PM2.5	0.041	0.009	0.035	0.16
	PM10	0.051	0.011	0.06	0.3
Point 16-DNV (Km 20+460)					
Average value	PM2.5	0.042	0.009	0.035	0.16
	PM10	0.05	0.009	0.06	0.3
Point 18-DNV (Km 34+480)					
Average value	PM2.5	0.04	0.015	0.035	0.16
	PM10	0.049	0.015	0.06	0.3

Point Crusher (Km 25+000)					
Average value	PM2.5	0.042	-	0.035	0.16
	PM10	0.053	-	0.06	0.3

Table 11 F: The results and average values of dust (PM2.5 and PM10) instrumental measurements at selected sensitive points-December 2025

Measurements		**Dust actual concentration, mg/m³ 22.12.2025**	**Dust concentration, mg/m³**	**Maximum permissible concentration (MPC) for dust, mg/m³**	
			Baseline data of 16.03.2024	**Daily average**	**Maximum value**
Point 4-DNV (km 33+880)					
Average value	PM2.5	0.053	0.011	0.035	0.16
	PM10	0.0675	0.011	0.06	0.3
Point 7-DNV (km 25+190)					
Average value	PM2.5	0.05	0.011	0.035	0.16
	PM10	0.0625	0.012	0.06	0.3
Point Batching plant (km 25+680)					
Average value	PM2.5	0.0475	-	0.035	0.16
	PM10	0.06	-	0.06	0.3
Point 14-DNV (km 23+100)					
Average value	PM2.5	0.0445	0.009	0.035	0.16
	PM10	0.0535	0.011	0.06	0.3
Point 16-DNV (Km 20+460)					
Average value	PM2.5	0.0465	0.009	0.035	0.16
	PM10	0.0595	0.009	0.06	0.3
Point 18-DNV (Km 34+480)					
Average value	PM2.5	0.0515	0.015	0.035	0.16
	PM10	0.0685	0.015	0.06	0.3
Point 19-DNV (km 35+120)					
Average value	PM2.5	0.052	-	0.035	0.16
	PM10	0.067	-	0.06	0.3
Inside Tunnel №2					

Average value	PM2.5	0.052	-	0.035	0.16
	PM10	0.0665	-	0.06	0.3
Inside Tunnel №3					
Average value	PM2.5	0.268	-	0.035	0.16
	PM10	0.311	-	0.06	0.3

4.1.2 Noise and vibration

123. During the reporting period (July–December 2025), instrumental noise monitoring was conducted at selected sensitive receptor points along the Project corridor, including residential areas (e.g., Vardanidzor and Agarak), active construction sites, and key facilities such as camp areas and material processing zones.

124. The monitoring results generally confirmed that noise levels at monitored open-air sensitive receptors remained within the applicable national threshold limit values established under the legislation of the Republic of Armenia (55–65 dB for daytime conditions, as applicable). Variations in noise levels were observed across different months, primarily reflecting changes in work fronts, equipment density, and traffic intensity.

125. In addition to the Contractor's internal monitoring program, independent instrumental measurements were conducted under the TPEME framework, providing additional assurance on the reliability of the monitoring outcomes. The independent results were generally consistent with the Contractor's monitoring data.

126. While open-air receptors remained compliant, monitoring and site inspections, including independent verification activities, identified elevated noise levels within Tunnel No. 2 and Tunnel No. 3 as an occupational health concern during active excavation works. Consequently, based on the Supervision Engineer's instructions and applicable OHS requirements, the Contractor was required to strictly enforce the use of PPE, including hearing protection (earplugs/earmuffs), for all personnel working in tunnel excavation zones.

127. Overall, no systematic exceedances requiring the suspension of works were identified at residential locations.

128. However, to ensure continued compliance and minimize nuisance impacts during intensive earthworks and blasting-related activities, the Contractor was instructed to maintain a rigorous schedule of equipment maintenance, manage vehicle movements to avoid unnecessary disturbance, and strictly prohibit unnecessary machinery idling near sensitive receptors.

129. Instrumental vibration monitoring was performed at sensitive locations to evaluate the impact of construction activities, with a primary focus on blasting operations for road widening and tunnel excavation. The Project applies the 109 dB TLV established for transport-technological (2nd category) vibration, which is used as the compliance benchmark for the monitoring program.

130. The monitoring results for the reporting period (July–December 2025), supported by independent verification, confirmed that vibration levels at all monitored surface points remained within the permissible 109 dB limit. The averaged corrected and equivalent corrected vibration acceleration values did not exceed the applicable threshold during daytime monitoring periods.

131. To ensure continued compliance, the Contractor was required to strictly follow the approved blasting schedules and to implement pre-notification procedures for local residents.

132. The monitoring results are presented in the tables below.

Table 12 A: Noise measurement results in July 2025

No	Location	Noise standards (dBA) 07:00-23:00		Results of measurements (dBA) July, 2025		Results of measurements (dBA)	
		Threshold limit value (TLV) (equivalent to sound level)	Maximum sound level (MSL)			Baseline data of 16.03.24	
				TLV	MSL	TLV	MSL
1.	**DNV-3, km 35+560,** Administrative territory of Meghri community (out of the city)	55	70	55.5	72.7	58.5	79.4
2.	**DNV- 7, km 25+190, A**dministrative area of Vardanidzor settlement	55	70	47.7	66.5	50.3	73.9
3.	**Camp, km 25+650,** Near Batching plant	70	-	66.1	72.2	-	-
4.	**DNV-9, km 19+260,** Administrative territory of Lichq community	55	70	55.0	67.0	49.0	74.5
5.	**DNV-10, km 17+000,** Administrative territory of Lichk community	55	70	54.2	67.8	53.5	67.6
6.	**DNV-14, km 23+100**, Administrative area of Vardanidzor settlement	55	70	46.1	66.6	55.0	68.7
7.	**DNV-16, km 20+460,** Administrative area of Lichk community	55	70	52.1	66.2	57.4	70.7
8.	**DNV- 17 (Km 36+960)** Meghri Medical center	55	70	50.5	66.4	55.1	79.3
9.	**DNV-18 (**Km 34+480) Administrative territory of Meghri community near TU3	55	70	51.2	64.3	47.0	62.7

133. In July the averaged actual equivalent noise levels at all measurement points except for Point-3 DNV were below or equal to the 55 dBA TLV set by sanitary standards for equivalent noise levels near residential houses.

134. The averaged actual maximum noise levels at all measurement points except for Point-3 DNV were below the 70 dBA TLV set by sanitary standards for equivalent noise levels near residential houses.

135. The averaged actual equivalent and maximum noise levels at Point-3 DNV were above the 55 dBA and 70 dBA TLVs set by sanitary standards, but were below the baseline measurement data.

136. The averaged actual equivalent noise level at the construction camp (Point Camp) was below the 70 dBA equivalent TLV set for industrial noise. The averaged actual maximum noise level is not subject to normative assessment for Point Camp and is provided for reference purposes only.

137. The main noise sources within the project influence area are the operation of construction machinery and vehicle traffic, including project-related vehicles moving along the existing road. During the monitoring, the operation of excavators and watering truck was observed.

Table 12 B: Noise measurement results in August- 2025

No	Location	Noise standards (dBA) 07:00-23:00		Results of measurements (dBA) 22.08.2025		Results of measurements (dBA)	
		Threshold limit value (TLV) (equivalent to sound level)	Maximum sound level (MSL)			Baseline data of 16.03.24	
				TLV	MSL	TLV	MSL
1.	**DNV- 7, km 25+190, A**dministrative area of Vardanidzor settlement	55	70	47.7	68.0	50.3	73.9
2.	**Camp, km 25+650,** Near Batching plant	70	-	64.5	74.6	-	-
3.	**DNV-9, km 19+260,** Administrative territory of Lichq community	55	70	51.2	65.5	49.0	74.5
4.	**DNV-10, km 17+000,** Administrative territory of Lichk community	55	70	54.2	67.8	53.5	67.6
5.	**DNV-14, km 23+100**, Administrative area of Vardanidzor settlement	55	70	45.7	61.4	55.0	68.7
6.	**DNV-16, km 20+460,** Administrative area of Lichk community	55	70	54.9	69.0	57.4	70.7

7.	**DNV- 17 (Km 36+960)** Meghri Medical center	55	70	50.6	66.5	55.1	79.3
8.	**DNV-18 (**Km 34+480) Administrative territory of Meghri community near TU3	55	70	52.6	67.3	47.0	62.7

138. In August-The averaged actual equivalent and maximum noise levels at all measurement points except for Point Camp were below the 55 dBA and 70 dBA TLVs set by sanitary standards for equivalent and maximum noise levels near residential houses and medical centers.

139. The averaged actual equivalent noise levels at measurement Point Camp were below the 70 dBA TLV set by sanitary standards for equivalent noise levels near industrial areas.

140. The main noise sources within the project influence area are the operation of construction machinery and vehicle traffic, including project-related vehicles moving along the existing road. During the monitoring, the operation of excavators, concrete mixers, lorry crane and heavy trucks was observed.

Table 12 C: Noise measurement results in September 2025

No	Location	Noise standards (dBA) 07:00-23:00		Results of measurements (dBA) 23.09.2025		Results of measurements (dBA)	
		Threshold limit value (TLV) (equivalent to sound level)	Maximum sound level (MSL)	TLV	MSL	Baseline data of 16.03.24 TLV	MSL
1.	**DNV- 7, km 25+190, A**dministrative area of Vardanidzor settlement	55	70	53.4	68.7	50.3	73.9
2.	**Camp, km 25+650,** Near Batching plant	70	-	75.3	84.7	-	-
3.	**DNV-9, km 19+260,** Administrative territory of Lichq community	55	70	53.4	68.4	49.0	74.5
4.	**DNV-10, km 17+000,** Administrative territory of Lichk community	55	70	50.6	64.8	53.5	67.6
5.	**DNV-14, km 23+100**, Administrative area of Vardanidzor settlement	55	70	53.4	68.7	55.0	68.7
6.	**DNV-16, km 20+460,** Administrative area of Lichk community	55	70	54.8	65.2	57.4	70.7
7.	**DNV- 17 (Km 36+960)** Meghri Medical center	55	70	51.9	68.7	55.1	79.3

8.	**DNV-18 (**Km 34+480) Administrative territory of Meghri community near TU3	55	70	52.6	67.3	47.0	62.7

141. In September, the averaged actual equivalent noise levels at all measurement points were below the 55 dBA TLV set by sanitary standards for equivalent noise levels near residential houses.

142. The averaged actual maximum noise levels at all measurement points were below the 70 dBA TLV set by sanitary standards for maximum noise levels near residential houses.

143. The averaged actual equivalent noise level at Point Camp exceeds the 70 dBA TLV set by the IFC/WHO guidelines for the industrial areas.

144. The main noise sources within the project influence area are the operation of construction machinery and vehicle traffic, including project-related vehicles moving along the existing road. During the monitoring, the operation of excavators, concrete mixer truck and truck-mounted crane was observed.

Table 12 D: Noise measurement results in October 2025

No	Location	Noise standards (dBA) 07:00-23:00		Results of measurements (dBA) 06.10.2025		Results of measurements (dBA)	
		Threshold limit value (TLV) (equivalent to sound level)	Maximum sound level (MSL)	TLV	MSL	Baseline data of 16.03.24 TLV	Baseline data of 16.03.24 MSL
1.	**DNV-4, km 33+880,** Meghri community (within the city)	55	70	50.9	65.7	51.2	63.4
2.	**DNV- 7, km 25+190, A**dministrative area of Vardanidzor settlement	55	70	52.8	68.6	50.3	73.9
3.	**Camp, km 25+650,** Near Batching plant	70	-	78.0	91.8	-	-
4.	**DNV-9, km 19+260,** Administrative territory of Lichq community	55	70	55.7	69.4	49.0	74.5
5.	**DNV-10, km 17+000,** Administrative territory of Lichk community	55	70	54.5	67.6	53.5	67.6
6.	**DNV-14, km 23+100**, Administrative area of Vardanidzor settlement	55	70	47.8	67.8	55.0	68.7
7.	**DNV-16, km 20+460,** Administrative area of Lichk community	55	70	58.2	71.3	57.4	70.7

8.	**DNV-18 (**Km 34+480) Administrative territory of Meghri community near TU3	55	70	51.	69.2	47.0	62.7
9.	**Point Crusher (km 25+000)**	70	-	64.1	70.2	-	-

145. In October, the averaged actual equivalent noise levels at Point-4 DNV, Point-7 DNV, Point-10 DNV, Point-14 DNV and Point-18 DNV are below the 55 dBA TLV set by sanitary standards for equivalent noise levels near residential houses.

146. The averaged actual equivalent noise levels at Point-9 DNV and Point-16 DNV exceed the 55 dBA TLV set by sanitary standards for equivalent noise levels near residential houses.

147. The averaged actual maximum noise levels at all measurement points except for Point-16 DNV were below the 70 dBA TLV set by sanitary standards for maximum noise levels near residential houses.

148. The averaged actual equivalent noise level at Point Camp exceeds the 70 dBA TLV set by the IFC/WHO guidelines for the industrial areas.

149. The averaged actual equivalent noise level at Point Crusher is below the 70 dBA TLV set by the IFC/WHO guidelines for the industrial areas.

150. The main noise sources within the project influence area are the operation of construction machinery and vehicle traffic, including project-related vehicles moving along the existing road. During the monitoring, the operation of excavator, bulldozer, concrete mixer trucks and truck-mounted crane was observed

Table 12 E: Noise measurement results in November 2025

No	Location	Noise standards (dBA) 07:00-23:00		Results of measurements (dBA) 20.11.2025		Results of measurements (dBA)	
		Threshold limit value (TLV) (equivalent to sound level)	Maximum sound level (MSL)			Baseline data of 16.03.24	
				TLV	MSL	TLV	MSL
1.	**DNV-4, km 33+880,** Meghri community (within the city)	55	70	59.2	66.9	51.2	63.4
2.	**DNV- 7, km 25+190, A**dministrative area of Vardanidzor settlement	55	70	60.4	72.5	50.3	73.9
3.	**Camp, km 25+650,** Near Batching plant	70	-	59.1	67.9	-	-
4.	**DNV-9, km 19+260,** Administrative territory of Lichq community	55	70	54.4	68.3	49.0	74.5

5.	**DNV-14, km 23+100**, Administrative area of Vardanidzor settlement	55	70	52.5	69.1	55.0	68.7
6.	**DNV-16, km 20+460,** Administrative area of Lichk community	55	70	55	68.2	57.4	70.7
7.	**DNV-18 (**Km 34+480) Administrative territory of Meghri community near TU3	55	70	68.6	79.8	47.0	62.7

151. In November, the averaged actual equivalent noise levels at Point-9 DNV, Point-14 DNV and Point-16 DNV are below the 55 dBA TLV set by sanitary standards for equivalent noise levels near residential houses.

152. The averaged actual equivalent noise levels at Point-4 DNV, Point-7 DNV and Point-18 DNV exceed the 55 dBA TLV set by sanitary standards for equivalent noise levels near residential houses.

153. The averaged actual maximum noise levels at all measurement points except for Point-7 DNV and Point-18 DNV were below the 70 dBA TLV set by sanitary standards for maximum noise levels near residential houses.

154. The averaged actual equivalent noise level at Point Camp are below the 70 dBA TLV set by the IFC/WHO guidelines for the industrial areas.

155. The main noise sources within the project influence area are the operation of construction machinery and vehicle traffic, including project-related vehicles moving along the existing road. During the monitoring, the operation of excavator, bulldozer, concrete mixer trucks and heavy trucks was observed.

Table 12 F: Noise measurement results in December 2025

No	**Location**	**Noise standards (dBA) 07:00-23:00**		**Results of measurements (dBA) 22.12.2025**		Baseline data of 16.03.24 **(dBA)**	
		Threshold limit value (TLV) (equivalent to sound level)	Maximum sound level (MSL)	TLV	MSL	TLV	MSL
1.	**DNV-4, km 33+880,** Meghri community (within the city)	55	70	53.6	67.3	51.2	63.4
2.	**DNV- 7, km 25+190, A**dministrative area of Vardanidzor settlement	55	70	69.3	73.2	50.3	73.9
3.	**Camp, km 25+650,** Near Batching plant	70	-	68.1	83.4	-	-

4.	**DNV-14, km 23+100**, Administrative area of Vardanidzor settlement	55	70	57.5	67.4	55.0	68.7
5.	**DNV-16, km 20+460,** Administrative area of Lichk community	55	70	66.2	80.5	57.4	70.7
6.	**DNV-18 (**Km 34+480) Administrative territory of Meghri community near TU3	55	70	51.2	65.5	47.0	62.7
7.	**Point 19-DNV (km 35+120)** Administrative territory of Meghri community near bridge foundations	55	70	57.2	67.8	-	-

156. In December, the averaged actual equivalent noise levels at Point-9 DNV, Point-14 DNV and Point-16 DNV are below the 55 dBA TLV set by sanitary standards for equivalent noise levels near residential houses.

157. The averaged actual equivalent noise levels at Point-4 DNV, Point-7 DNV and Point-18 DNV exceed the 55 dBA TLV set by sanitary standards for equivalent noise levels near residential houses.

158. The averaged actual maximum noise levels at all measurement points except for Point-7 DNV and Point-18 DNV were below the 70 dBA TLV set by sanitary standards for maximum noise levels near residential houses.

159. The averaged actual equivalent noise level at Point Camp are below the 70 dBA TLV set by the IFC/WHO guidelines for the industrial areas.

160. The main noise sources within the project influence area are the operation of construction machinery and vehicle traffic, including project-related vehicles moving along the existing road. During the monitoring, the operation of excavator, bulldozer, concrete mixer trucks and heavy trucks was observed.

161. The monitoring results for **vibration** measurements are presented in the tables below.

Table 13 A: The results of the vibration measurements –July 2025

№	Location of measurements	The maximum level of vibration acceleration (average of 2 measurements), dB		Permissible values of vibration acceleration, dB
		July 2025	Baseline data of 16.03.2024	
1.	**DNV-3, km 35+560,** Administrative territory of Meghri community (out of the city)	94.8	90.6	109
2.	**DNV-7, km 25+190**, Sdministrative area of Vardanidzor settlement	85.1	91.6	109
3.	**Camp, km 25+650,** Near Batching plant	97.4	-	109

4.	**DNV-9, km 19+260,** Administrative territory of Lichq community	86.0	85.9	109
5.	**DNV-10, km 17+000,** Administrative territory of Lichk community	86.9	85.3	109
6.	**14-DNV, km 23+100**, Administrative area of Vardanidzor settlement	84.8	98.5	109
7.	**16-DNV, km 20+460,** Administrative area of Lichk community	88.8	93.3	109
8.	**DNV- 17 (Km 36+960),** Meghri Medical center	88.4	93.6	109
9.	**DNV-18 (**Km 34+480), Administrative territory of Meghri community near TU3	100.7	107	109

162. In July, at all 9 measurement points, the averaged actual corrected and equivalent corrected values of vibration acceleration during different periods of the daytime did not exceed the 109 TLV set for transport-technological (2nd category) vibration.

Table 13 B: The results of the vibration measurements –August 2025

№	Location of measurements	The maximum level of vibration acceleration (average of 2 measurements), dB		Permissible values of vibration acceleration, dB
		August 2025	Baseline data of 16.03.2024	
1.	**DNV-7, km 25+190**, Administrative area of Vardanidzor settlement	96.9	91.6	72
2.	**Camp, km 25+650,** Near Batching plant	95.0	-	109
3.	**DNV-9, km 19+260,** Administrative territory of Lichq community	93.5	85.9	72
4.	**DNV-10, km 17+000,** Administrative territory of Lichk community	106.4	85.3	72
5.	**14-DNV, km 23+100**, Administrative area of Vardanidzor settlement	88.4	98.5	72
6.	**16-DNV, km 20+460, Administrative area of Lichk community**	**98.7**	**93.3**	**72**
7.	**DNV- 17 (Km 36+960), Meghri Medical center**	**104.9**	**93.6**	**72**
8.	**DNV-18 (Km 34+480), Administrative territory of Meghri community near TU3**	**86.5**	**107**	**72**

163. In August, all 7 sampling points, except point Camp, km 25+650, near batching plant, are situated near residential areas, clinic, rest houses, thus, TLV 72 dB is set for these points as a threshold value. For the sampling point near the batching plant TLV 109dB is set relevant to Transport- technological (2nd category) areas.

164. At 7 sampling points next to residential areas the averaged actual corrected and equivalent corrected values of vibration acceleration during different periods of the daytime exceeded the norm -72 dB. It should be mentioned that the baseline values also exceeded this norm. The measurement results exceeded the baseline values as well, except DNV points 14 and 18. The data of most concern are ones of DNV-10 – km 17, Lichk community and DNV-17- Meghri Medical Center.

165. Only value of the batching plant sampling point showed the result below the threshold value set for Technological areas (2nd category).

Table 13 C: The results of the vibration measurements –September 2025

№	Location of measurements	The maximum level of vibration acceleration (average of 2 measurements), dB		Permissible values of vibration acceleration, dB
		September, 2025	Baseline data of 16.03.2024	
1.	**DNV-7, km 25+190**, Administrative area of Vardanidzor settlement	92	91.6	109
2.	**Camp, km 25+650,** Near Batching plant	94.3	-	109
3.	**DNV-9, km 19+260,** Administrative territory of Lichq community	85.9	85.9	109
4.	**DNV-10, km 17+000,** Administrative territory of Lichk community	97.3	85.3	109
5.	**14-DNV, km 23+100**, Administrative area of Vardanidzor settlement	85.8	98.5	109
6.	**16-DNV, km 20+460,** Administrative area of Lichk community	101.4	93.3	109
7.	**DNV- 17 (Km 36+960),** Meghri Medical center	92.5	93.6	109
8.	**DNV-18 (**Km 34+480), Administrative territory of Meghri community near TU3	85.5	107	109

166. In September, at all 8 measurement points, the averaged actual corrected and equivalent corrected values of vibration acceleration during different periods of the daytime did not exceed the 109 TLV set for transport- technological (2nd category) vibration.

Table 13 D: The results of the vibration measurements –October 2025-

№	Location of measurements	The maximum level of vibration acceleration (average of 2 measurements), dB		Permissible values of vibration acceleration, dB
		October, 2025	Baseline data of 16.03.2024	
1.	**DNV-4, km 33+880,** Meghri community, inside the city	86.9	91.6	109
2.	**DNV-7, km 25+190**, Administrative area of Vardanidzor settlement	85.7	91.6	109
3.	**Camp, km 25+650,** Near Batching plant	85.8	-	109
4.	**DNV-9, km 19+260,** Administrative territory of Lichq community	90.7	85.9	109
5.	**DNV-10, km 17+000,** Administrative territory of Lichk community	93.5	85.3	109
6.	**14-DNV, km 23+100**, Administrative area of Vardanidzor settlement	87.2	98.5	109
7.	**16-DNV, km 20+460,** Administrative area of Lichk community	90.8	93.3	109
8.	**DNV-18 (**Km 34+480), Administrative territory of Meghri community near TU3	86.5	107	109
9.	**Point Crusher (km 25+000)**	105.5	-	109

167. In October, at all 9 measurement points, the averaged actual corrected and equivalent corrected values of vibration acceleration during different periods of the daytime did not exceed the 109 TLV set for transport- technological (2nd category) vibration.

Table 13 E: The results of the vibration measurements –November 2025

№	Location of measurements	The maximum level of vibration acceleration (average of 2 measurements), dB		Permissible values of vibration acceleration, dB
		November, 2025	Baseline data of 16.03.2024	
1.	**DNV-4, km 33+880,** Meghri community, inside the city	88.5	91.6	109
2.	**DNV-7, km 25+190**, Administrative area of Vardanidzor settlement	103.3	91.6	109

3.	**Camp, km 25+650,** Near Batching plant	103.7	-	109
4.	**DNV-9, km 19+260,** Administrative territory of Lichq community	101.3	85.9	109
5.	**14-DNV, km 23+100**, Administrative area of Vardanidzor settlement	94.1	98.5	109
6.	**16-DNV, km 20+460,** Administrative area of Lichk community	93.7	93.3	109
7.	**DNV-18 (**Km 34+480), Administrative territory of Meghri community near TU3	87.6	107	109

168. In November, at all 7 measurement points, the averaged actual corrected and equivalent corrected values of vibration acceleration during different periods of the daytime did not exceed the 109 TLV set for transport-technological (2nd category) vibration.

169. **Table 13 F: The results of the vibration measurements – December 2025**

№	Location of measurements	The maximum level of vibration acceleration (average of 2 measurements), dB		Permissible values of vibration acceleration, dB
		December, 2025	Baseline data of 16.03.2024	
1.	**DNV-4, km 33+880,** Meghri community, inside the city	96.6	91.6	109
2.	DNV-7, km 25+190, Administrative area of Vardanidzor settlement	97.0	91.6	109
3.	Camp, km 25+650, Near Batching plant	101.8	-	109
4.	14-DNV, km 23+100, Administrative area of Vardanidzor settlement	86.0	98.5	109
5.	16-DNV, km 20+460, Administrative area of Lichk community	85.8	93.3	109
6.	DNV-18 (Km 34+480), Administrative territory of Meghri community near TU3	94.4	107	109
7.	DNV-19 (km 35+120) Administrative territory of Meghri community near bridge foundations	101.4	-	109

170. In December, at all measurement points, the averaged actual corrected and equivalent corrected values of vibration acceleration during different periods of the daytime did not exceed the 109 TLV set for transport-technological (2nd category) vibration.

4.1.3 Water, Soil and Air quality for gas emissions

171. Instrumental monitoring of water quality, soil, and air quality for gas emissions was conducted throughout the reporting period by the Contractor's accredited laboratory ("Hydrometeorology and Monitoring Center" SNCO) and supported by independent verification activities under the TPEME framework, including involvement of "Green Time" LLC, as applicable.

172. Surface water quality was monitored at established points along the Meghri River, particularly near areas of active bridge construction, river diversion, and river cleaning activities (e.g., km 24+100 and km 37+100). Laboratory analysis results indicated that surface water quality remained stable and generally compliant with Category II/III (Good/Fair) classification under RA Government Decree No. 75-N.

173. Independent verification sampling conducted under the TPEME framework confirmed that key indicators, including mineralization (82–131 mg/L) and ion concentrations, remained within the baseline range, and no construction-related deterioration trends were identified during the reporting period.

174. Monitoring of sulfur dioxide (SO_2) and nitrogen dioxide (NO_2) was performed at selected sensitive receptor points. In August and September 2025, elevated SO_2 values were recorded at the Vardanidzor residential area (km 34+450). A follow-up assessment conducted in October, supported by independent review, indicated that these peaks were likely associated with localized seasonal fruit-drying activities involving sulfur combustion, which is a common practice in the Meghri region, rather than Project-related sources. Following the end of the harvest season, SO_2 concentrations returned to levels consistent with baseline conditions.

175. NO_2 concentrations remained below the applicable thresholds at most monitoring points. In December 2025, localized increases in NO_2 were recorded in proximity to active construction zones (e.g., km 25+000), potentially linked to increased heavy vehicle movements and winter operating conditions (cold-start emissions).

176. Soil monitoring focused on potential contamination risk areas, including the main camp, fuel storage areas, and dumping sites.

177. Following the EFSD mission in July 2025, minor spill traces were identified at dumping site km 16+400 and in the main camp. Corrective actions were implemented, including collection of contaminated soil and transfer to a designated hazardous waste storage area, and installation of spill containment pallets under stationary machinery, with reinforced controls for fuel and lubricant handling.

178. Soil sampling was excluded as considered non-informative due to embankment of the camps and batching plants areas by the aggregate, gravel brought from the other sites. Soil sampling will be done at the stage of handing over the sites if requested by the landlord.

179. Detailed instrumental water and air quality monitoring results and laboratory protocols for July, August, September, October, and November 2025 are provided in **Annex 2.** The December 2025 monitoring results were not available at the time of preparation of this Semi-Annual Report and therefore are not included in Annex 2.

Air quality (gas emissions)

Table 14 A: Results of gas emissions monitoring, July, 2025

Parameters	Measurement unit	TPC (daily average)	Sampling point 1 (tunnel No 2)		Sampling point 2 (batching plant)		Sampling point 3 (Residential area at km 34+500), TU3
			June, 25	July, 25	June, 25	July, 25	July, 25
SO2	mg/m³	0.05	0.0343	0.0250	0.0438	0.0400	0.0536
NO2	mg/m³	0.04	0.0318	0.0318	0.0158	0.0324	0.00279

180. Gas emission data presented are for July 2025 as the sampling was implemented for 7 days during 17.07.25-24.07.25 and on 25.07.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 07.08.2025.

181. 3 sampling points were selected during a joint site discussion between the Contractor's and the Engineer's Environmental Specialists to monitor the air in Tunnel N2, to continue monitoring of Batching plant activities' impact and monitor the construction activities on Meghri residential area near km 35.

- N 1 – in Tunnel N 2 (km 16+300). There are no residential sections near the point.
- N 2 – Near the batching plant (km 25+600). There are no residential sections near the point. The Batching Plant was operated during sampling.
- N 3 - Near the residential area of Meghri, at km 34+500, near Tunnel No3.

182. The air quality monitoring results indicate overall compliance with national standards (MPCs, Governmental decree N 160-N of February 2, 2006 on Approving the standards for threshold permissible concentrations (TPC) of pollutants in ambient air in residential areas) in sampling points 1 and 2 – tunnel 2 and batching plant.

183. SO_2 concentration decreased in sampling point 1 (TU2) compared with June results, moving further below the threshold, which reflects an improvement. NO_2 values remained unchanged, staying below the limit but close to it. Overall, conditions at this point remain within permissible levels, with a positive trend for SO_2.

184. Slight improvement in SO2 level can be seen in sampling point 2 compared with June, while NO2 level increased almost twofold, though it still remained under the daily limit. This shift indicates a deterioration in NO_2 conditions, likely associated with traffic or machinery emissions in the construction zone, and should be carefully monitored.

185. This location of sampling point 3 has no previous measurement for comparison, but the current results show SO_2 slightly above the threshold and NO_2 at very low levels. Exceedance of SO_2 in a residential area is concerning and requires immediate corrective actions, such as stricter emission controls on construction equipment, limiting machinery idling times, and reinforcing watering or suppression

measures for works that generate combustion gases. Continuous monitoring should be maintained to verify that exceedances are reduced.

Table 14 B: Results of gas emissions monitoring, August 2025

Parameters	Measurement unit	TPC (daily average)	Sampling point 1 (tunnel No 2)		Sampling point 2 (batching plant)		Sampling point 3 (Residential area at km 34+500), TU3	
			July, 25	August, 25	July, 25	August, 25	July, 25	August, 25
SO2	mg/m³	0.05	0.0250	0.0345	0.0400	0.0479	0.0536	0.0544
NO2	mg/m³	0.04	0.0318	0.0389	0.0324	0.0292	0.00279	0.00586

186. Gas emission data presented are for August 2025 as the sampling was implemented for 7 days during 16.08.25-23.08.25 and on 25.08.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 17.09.2025.

187. 3 sampling points were selected during a joint site discussion between the Contractor's and the Engineer's Environmental Specialists to monitor the air in Tunnel N2, to continue monitoring of Batching plant activities' impact and monitor the construction activities on Meghri residential area near km 35.

- N 1 – in Tunnel N 2 (km 16+300). There are no residential sections near the point.
- N 2 – Near the batching plant (km 25+600). There are no residential sections near the point. The Batching Plant was operated during sampling.
- N 3 - Near the residential area of Meghri, at km 34+500, near Tunnel No3.

188. The air quality monitoring results indicate overall compliance with national standards (MPCs, Governmental decree N 160-N of February 2, 2006 on Approving the standards for threshold permissible concentrations (TPC) of pollutants in ambient air in residential areas) in sampling points 1 and 2 – tunnel 2 and batching plant.

189. Km 34+050 (residential): SO_2 continues to exceed the standard, requiring immediate reinforcement of mitigation measures, including stricter controls on equipment emissions, limiting machinery idling, and ensuring consistent suppression practices, reinforcement of mitigation measures, including stricter controls on equipment emissions, limiting machinery idling, and ensuring consistent suppression practices, while NO_2 remains very low.

Table 14 C: Results of gas emissions monitoring, September 2025

N	**Name of the Tested Indicator**	**Measurement unit**	**Threshold daily average concentration**	**Air 1 - Km 16+380**		**Air 2 - Km 25+600**		**Air 3 – Residential area at km 34+050**	
				August 2025	Reporting period	August 2025	Reporting period	August 2025	Reporting period

1.	Sulfur dioxide – SO2	mg/m³	0.05	0.0345	0.0395	0.0479	0.0440	0.0544	0.0113
2.	Nitrogen dioxide – NO2	mg/m³	0.04	0.0389	lost	0.0292	0.0152	0.00586	0.00684

190. Gas emission data presented are for September 2025 as the sampling was implemented for 7 days during 20.09.25-27.09.25 and on 29.09.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 23.10.2025.

191. 4 sampling points were selected during a joint site discussion between the Contractor's and the Engineer's Environmental Specialists to monitor the air in Tunnel N2, to continue monitoring of Batching plant activities' impact, air in TU3 and monitor the construction activities on Meghri residential area near km 35.

- **N 1** – in Tunnel N 2 (km 16+380), depth around 230 m. Various machinery was working in the tunnel N2 during sampling (excavator, trucks, others).There are no residential sections near the point.
- **N 2** – Near the batching plant (km 25+600). There are no residential sections near the point. (The Batching Plant was operated during sampling)
- **N 3** - Inside TU3, but the sensors were lost during shotcreting works.
- **N 4 -** Near the residential area of Meghri, at km 34+500, near Tunnel N3. The tablet was placed on a residential building. Everyday blasting activities are implemented in TU N3. Jumbo driller was operated during the sampling. The internal community road passes in 70-80 m distance.

192. Air Point 1 – km 16+380-Compared with August 2025, SO_2 concentrations increased slightly from 0.0345 to 0.0395 mg/m³, remaining well below the permissible daily average threshold of 0.05 mg/m³. NO_2 data for the reporting period was not recorded; however, based on previous values, it is expected to stay within the limit. Overall, air quality at this point remains satisfactory, with pollutant levels below the standards.

193. Air Point 2 – km 25+600-At this point, SO_2 decreased slightly from 0.0479 to 0.0440 mg/m³, staying under the threshold. NO_2 concentrations also decreased notably, from 0.0292 to 0.0152 mg/m³, remaining comfortably within permissible limits. The general trend shows an improvement in air quality compared with August 2025, suggesting reduced emissions from machinery and vehicle movement in this area.

194. Air Point 3 – Residential Area at km 34+500-In the residential zone, SO_2 concentrations dropped sharply from 0.0544 to 0.0113 mg/m³. The high value recorded during August 2025 was not related to project activities but rather to temporary household sources, particularly the seasonal drying of fruits, where sulfur is used for preservation. The current reporting period shows that SO_2 has returned to a very low, safe level. NO_2 slightly increased from 0.00586 to 0.00684 mg/m³ but remains far below the standard.

195. Km 16+380: SO_2 slightly increased but remains below the limit; NO_2 data not recorded but expected to stay compliant.

196. Km 25+600: Both SO_2 and NO_2 decreased, showing improved air conditions.

197. Km 34+050 (residential): Previous SO_2 exceedance was due to seasonal fruit drying, not construction; current results show full compliance for both indicators.

Table 14 D: Results of gas emissions monitoring, October 2025

N	Indicator	Meas. units	TDAC	Air 1 - Km 25+000	Air 2 - Km 25+600	
				Reporting period	Sept 2025	Reporting period
1.	Sulfur dioxide – SO2	mg/m³	0.05	0.0400	0.0440	0.0365
2.	Nitrogen dioxide – NO2	mg/m³	0.04	0.0219	0.0152	0.0214
				Residential areas next to TU3		
				Air 4 -at km 34+450		Air 5 –at km 34+800
				Sept 2025	Reporting period	Reporting period
1.	Sulfur dioxide – SO2	mg/m³	0.05	0.0113	0.0118	0.00979
2.	Nitrogen dioxide – NO2	mg/m³	0.04	0.00684	0.0200	0.0121

198. Gas emissions data presented are for October 2025 as the sampling was implemented for 7 days (18.10.25-25.10.25) and on 27.10.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 07.11.2025.

199. 5 sampling points were selected to continue monitoring the potential impact of batching plant activities, crusher plant operations, air conditions in TU3, construction activities near the Meghri residential area at km 35, and to conduct a control measurement in the deeper section of the residential area in Meghri.

- N 1 – Crusher plant at km 25+000, where the small fractions section was operating at the time of measurement.
- N 2 – Near the batching plant (km 25+600). There are no residential sections near the points. The Batching Plant was operated during sampling.
- N 3 – Inside TU3. Active excavation works were done inside tunnel. Jumbo drill equipment was working, several blasting works were done during the 7days of sampling.
- N 4 - Near the residential area of Meghri, at km 34+500, near Tunnel N3. The tablet was placed on a residential building. Everyday blasting activities are implemented in TU N3. Jumbo driller was operated during the sampling. The internal community road passes in 70-80 m distance.
- N 5 - In the residential area of Meghri, at km 34+800. The tablet was placed on a residential building. Everyday blasting activities are implemented in TU N3. Jumbo driller was operated during the sampling. The internal community road passes in 30 m distance.

200. Air Point 1 – km 25+000-SO_2 concentrations during the reporting period were below the daily average threshold and reflected stable conditions around the crusher plant area. NO_2 levels were also within permissible limits and showed no indication of elevated emissions. Overall, air quality at this point remained satisfactory, with pollutant concentrations characteristic of normal machinery operation.

201. Air Point 2 – km 25+600 -At this location, SO_2 and NO_2 concentrations were within the established limits. The values recorded indicate stable air conditions around the batching and construction zone, with no exceedances or signs of increased emissions during the reporting period.

202. Air Point 3 – TU3-Air quality inside the tunnel construction zone remained stable. Both SO_2 and NO_2 concentrations were below the applicable thresholds, showing that construction activities and internal ventilation do not create elevated pollutant levels. Conditions remained compliant throughout the reporting period.

203. Air Point 4 – Residential Area at km 34+450-SO_2 and NO_2 levels remained low and within permissible limits. The elevated SO_2 that appeared in earlier months was confirmed to be unrelated to construction activities and was caused by seasonal household fruit-drying practices involving sulfur use. These activities have now ended, and current measurements show normal background conditions in the residential area.

204. Air Point 5 – Residential Area at km 34+800 (Control Point)-This point served as a control measurement to verify the SO_2 situation in the deeper residential section. The recorded values were low and fully within the limits, confirming that the previous SO_2 increase in nearby areas was linked to seasonal fruit-drying rather than to construction works. Air quality at this point remains stable.

Table 14 E: Results of gas emissions monitoring, November 2025

N	Indicator	Meas. units	TDAC	Air 1 - TU2	Air 2 - Km 25+000		
				Reporting period	Oct. 2025	Reporting period	
1.	**Sulfur dioxide – SO2**	mg/m³	0.05	0.0355	0.0400	0.0373	
2.	**Nitrogen dioxide – NO2**	mg/m³	0.04	0.0107	0.0219	0.0428	

				Air -3- km 25+600, Batching plant		Air 4 –at km 34+450	
				Oct. 2025	**Reporting period**	**Oct. 2025**	**Reporting period**
1.	Sulfur dioxide – SO2	mg/m³	0.05	0.0365	0.0133	0.0118	0.0032
2.	Nitrogen dioxide – NO2	mg/m³	0.04	0.0214	0.0402	0.0200	0.0092

205. Gas emission data presented are for November 2025 as the sampling was implemented for 7 days (20.11.25-27.11.25) and on 28.11.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on18.12.2025.

206. 4 sampling points were selected to continue monitoring the potential impact of batching plant activities, crusher plant operations, air conditions in TU2, and construction activities near the Meghri residential area at km 34+500.

- N 1 – Inside TU2. Active concreting works were done inside tunnel. The monitoring tablet was installed at an approximate depth of 250 m from the tunnel entrance.
- N 2 Crusher plant at km 25+000, where the small fractions section was operating at the time of measurement.
- N 3– Near the batching plant (km 25+600). There are no residential sections near the points. The Batching Plant was operated during sampling.
- N 4 – Inside TU3. Active excavation works were done inside tunnel. Jumbo drill equipment was working; several blasting works were done during the 7days of sampling.
- N 4 - Near the residential area of Meghri, at km 34+500, near Tunnel N3. The tablet was placed on a residential building. Everyday blasting activities are implemented in TU N3. Jumbo driller was operated during the sampling. The internal community road passes in 70-80 m distance.

207. During the reporting period, sulfur dioxide (SO_2) concentrations remained below the daily average thresholds at all monitoring locations. Exceedances were recorded only for nitrogen dioxide (NO_2) at two monitoring points located within active construction areas (km 25+000 and km 25+600). At Air Point 2 (km 25+000), the recorded NO_2 exceedance is considered to be influenced by the location of the monitoring sensor in close proximity to an area with intensive movement of construction trucks. No exceedances were observed at the tunnel monitoring point or within residential areas. Overall, air quality at residential receptors remained compliant, while localized NO_2 exceedances near construction zones are associated with traffic-related emissions and monitoring point positioning.

4.1.4 Asphalt plant

208. No asphalt plant has been installed within reporting period.

4.1.5 Work camp

209. During the reporting period, the Project utilized one main construction camp and several auxiliary accommodation facilities to support the intensified work schedule and the growing workforce, which peaked at 693 personnel in December 2025.

210. The Project utilized one main construction camp and auxiliary accommodation facilities to support the intensified work schedule and the growing workforce, which reached a peak of 693 personnel in December 2025. Out of the total workforce, 532 persons were accommodated across three primary camp locations.

Table 15: List of camp personnel (December 2025)

Name of Camp	Persons
Main Camp	163
Aygedzor Camp	203 persons

camp at km 31+200 Cheese factory	174

211. The main camp located at km 25+000–25+300, remains the primary hub for administrative, residential and technical activities. It includes living quarters, offices, a canteen, and fuel storage and maintenance workshops. The camp is equipped with a wastewater management system consisting of septic tanks, which are regularly emptied by a licensed subcontractor. A newly relocated vehicle washing facility (km 25+650) with an oil separator was fully commissioned in July-August to prevent runoff contamination. In July 2025, the Contractor obtained the State Technical Expertise conclusion (N 1711) for the fuel storage tanks. However, audits by the Supervising Engineer and EFSD mission identified that safety signboards near the fuel area were initially only in English and too small. By the end of the semester, these were replaced with enlarged, bilingual (Armenian/English) warning signs.

212. Meals are provided regularly, and hygienic conditions are maintained through daily disinfection routines.

213. A formal land-lease agreement was finalized for the ALMI subcontractor's field canteen, ensuring its operation outside the RoW and maintaining required sanitation standards.

214. All camps are furnished with necessary sanitary facilities, consistent access to clean drinking water, and proper meals. A dedicated medical shelter is operational within the main camp, staffed by a trained nurse. Rigorous health protocols are in place; all drivers undergo alcohol and health checks before commencing work. Emergency readiness has been improved by designating assembly zones and ensuring that firefighting equipment (including OP-6 extinguishers, sand, and shovels) is erected in all premises and near machinery. All camp areas are fully fenced and monitored by 24/7 security surveillance systems.

215. Daily site inspections are conducted to monitor hygiene, waste management, and occupational safety. Areas for parking, car washing, and machinery repair have been constructed near the camps.

216. The relevant signage, such as speed limits, safety warnings and smoking prohibitions has been installed throughout the camps.

217. Compliance with environmental and health standards has been regularly checked by the Contractor’s and Engineer’s EHS specialists.

218. Observed non-conformities, such as fuel containment integrity and fall protection on temporary bridges, were addressed through CAPs.

219. Key issues identified during the semester through inspections and TPEME Quarterly Audits (Checklists N2/25 and N3/25) were addressed through the CAP:

- ✓ Strengthening waste segregation through the provision of additional labeled bins across all camps. Domestic waste removal is consistently managed through the valid agreement with the Meghri Municipality (Decree N349-A).
- ✓ Reinforcement of measures including spill containment pallets under stationary machinery and the collection of processed oil in secured, locked barrels.
- ✓ Specifically at the ALMI working area (km 34+200), where disorganized electrical wiring was safely relocated into locked panels following TPEME's instructions.

220. Overall, camp-related environmental and health risks remained manageable. The observed improvements in internal controls, the legalization of fuel infrastructure, and the implementation of bilingual signage demonstrate a positive compliance trend. Continued attention is required during the winter season to sustain housekeeping standards and ensure effective wastewater management under peak workforce conditions.

4.1.6 Flora and Fauna

221. During the reporting period, the Project continued to interact with natural habitats, primarily through vegetation clearance, earthworks, and blasting activities within the Project corridor.

222. Mitigation measures and monitoring were implemented in accordance with the TMP and the SSEMPs.

223. The Engineer's site supervision team monitored compliance through regular site visits and review of environmental documentation.

224. During the reporting period (July–December 2025), flora and fauna management activities focused on controlling vegetation clearance impacts, preventing biodiversity disturbance (including strict prohibition of hunting and fishing), and progressing compensatory tree planting actions. Vegetation clearance and tree cutting activities were restricted and controlled.

225. Tree cutting activities were documented through official tree calculation and cutting acts issued during the reporting period, confirming the number of trees subject to cutting and the formal marking/calculation procedures applied. In particular, a "Trees calculation and cutting act" was issued for the dumping site area at km 21+600 (dated 18 August 2025), confirming the number of trees subject to cutting within the relevant work area. In addition, further tree calculation acts dated 25 December 2025 were issued to document additional trees subject to cutting within the Project corridor.

226. During the reporting period, previously cut wood volumes were handled through coordination with the relevant municipal authorities, including formal handover arrangements. A formal handover act confirmed transfer of 1,057 m^3 of cut trees from the Contractor to the Meghri Community for community use (signed on 28 October 2025). (Please see **Annex 4**)

227. Throughout the reporting period, biodiversity disturbance prevention measures remained active, including strict prohibition of hunting, fishing, and other activities that could disturb wildlife or damage habitats. Workers were regularly informed about restrictions and behavioral requirements. Approved vegetation clearance was recorded during the semester.

228. Compensatory planting progressed during the reporting period and moved from preparation stages to implementation. In September 2025, a joint monitoring visit with representatives of Arevik National Park assessed the feasibility of replanting sites. It was concluded that replanting within the National Park would require additional permitting and an EIA expertise conclusion; therefore, arrangements were made to proceed with compensatory planting on community lands. Site suitability constraints were identified among the initially proposed community plots, and further coordination was initiated to secure an appropriate planting site with adequate conditions.

229. Planting was implemented during the reporting period, while protection and longer-term maintenance measures (including fencing completion) remained ongoing by the end of the semester.

230. In October 2025, preparatory steps continued, including engagement of a specialist, baseline

information collection, and nursery market assessment to secure appropriate saplings adapted to local conditions.

231. In November 2025, compensatory planting was implemented, including soil preparation on approximately 1.5 ha and planting of 7,500 saplings (ash, maple, and wild pear).

232. The BAP (including TMP) was drafted by Contractor, reviewed and commented by the Engineer. In December 2025 BAP was approved by Engineer.

233. Contractor from time to time is observing the wild goats next to the river or in the mountains. It means that regardless construction activities on site some wild species did not move and change the habit.

234. Overall, the reporting period demonstrates a positive progression from planning to implementation of compensatory planting activities, culminating in large-scale planting in November and protection measures initiated in December. No recurring biodiversity incidents were documented during the semester, and the only wildlife observation was recorded without any construction-related disturbance or impact.

Table 16 Trees cutting report (status by the end of December, 2025)

month, y. / location / Trees	y.end 2024		Feb. 2025		Mar-25	May-25	Dec-25
	Arevik park	municipality	km 18+800 - km 21+000	km 22+100 - km 22+280	km 21+000- km 21+300	km 22+300	km 13+800; km 22+400
	number						
Oak	987	6,004	824	11	32		**6**
Hornbeam	97	99	62				
Ash-tree	83	1,676	79	3	9	6	12 +**11**
Juniper	3	493	493		47	3	
Maple	83	225					13+**5**
hawthorn	2						
Walnut	6						
Beech		2,110					
Willow		417			34	17	5
Wild almond-tree					13		
TOTAL	**1,261**	**11,024**	**1,458**	**14**	**135**	**26**	**52**
Grand Total	**13,970**						

4.1.7 Topsoil management

235. During the reporting period (July–December 2025), topsoil management activities remained focused on the maintenance of existing stockpiles, compliance monitoring of approved depot sites, and securing the required legal authorizations for controlled topsoil relocation. Throughout the semester, the cumulative volume of stockpiled topsoil remained stable at 47,650 m³, reflecting that no significant new excavation and transfer of topsoil to temporary locations was recorded in the monthly reporting.

236. The Project maintained five (5) primary topsoil depot sites during the reporting period, with the following recorded cumulative volumes:

1) km 15+200 – 10,150 m³,
2) km 15+500 – 8,000 m³,

3) km 22+300 – 4,550 m³,
4) km 34+400 – 5,000 m³,
5) km 38+400 – 19,950 m³.

237. The depot at km 15+200 is located on privately owned land and was supported by a valid lease agreement and written landowner consent. The remaining depot locations are situated on Meghri community land and were supported by relevant municipal permissions and letters, while permits issued by the Syunik Marzpet and Meghri community were referenced as the legal basis for depot operation and topsoil handling activities during the reporting period.

238. Each depot location was marked with warning signs and boundary demarcation measures (e.g., fencing tape/wooden posts), and the sites were mapped using GPS coordinates. Site access was restricted where applicable, and regular inspections were carried out by the Contractor's and the Engineer's environmental teams. Depot condition monitoring checklists were included in the monthly reporting documentation.

239. During the semester, administrative and operational measures were implemented to support controlled relocation of topsoil from privately leased land to community-approved sites. A key milestone was the receipt of Letter E-1836 (dated 22 September 2025) issued by the Meghri community, authorizing transportation of topsoil from the private plot at km 15+200 to the approved location at km 16+400 (top of the waste dump site). In addition, a new permit was obtained for establishing a topsoil depot at km 16+500 to enable further relocation of topsoil from km 15+200. In December 2025, it was reported that translocation activities from km 15+200 to km 16+500 had been initiated, and that following completion of relocation and site restoration works, the km 15+200 plot would be cleared, leveled, and handed over to the landlord in accordance with the lease arrangements. While the monthly depot balance tables continued to indicate unchanged cumulative volumes as of 31.12.2025, the initiation of translocation activities indicates that stockpile redistribution between depots had commenced and will require updated volume reconciliation in subsequent reporting.

240. Topsoil stockpile management was subject to supervision and corrective actions where required. Monitoring identified previous non-conformities at the depot site km 38+400, where topsoil had been spread flat and exposed to vehicle traffic, resulting in compaction and increased risk of contamination from construction waste and machinery leakages. Under the Engineer's instruction, corrective measures were implemented and reported as closed, including stopping improper exploitation of the depot area, loosening compacted soil, removing stones and roots, re-arranging topsoil into standardized stockpiles, improving access arrangements to prevent vehicles traveling over the stockpiled material, and implementing erosion prevention measures (including slope leveling and placement of large stones to protect nearby water-related features).

241. The Contractor was also reminded that any reuse of stored topsoil for reinstatement or other purposes shall be subject to prior approval by the Engineer.

242. Overall, the topsoil management arrangements remained functional and controlled during the reporting period, with stable stockpile volumes maintained, permitting actions advanced for relocation from private to community land, and identified depot management deficiencies addressed through corrective measures.

4.2 Trends

243. Based on the monitoring results and field inspections conducted during the reporting period several key environmental trends have been identified. These trends reflect the intensified construction phase, including tunnel excavation and large-scale earthworks, and demonstrate a shift from planning to active implementation of environmental safeguards.

244. A localized trend of increased dust concentration was observed in tunnel environments, specifically in Tunnel No. 3, where PM2.5 and PM10 levels peaked in December 2025 (reaching 7.65 times the daily average limit). This indicates that as tunnel excavation depths, existing ventilation and suppression systems require continuous optimization. Conversely, in open-air residential areas, dust impacts remained largely within permissible limits (MPCs), although visual emissions next to receptors (e.g. Km 21+115) highlight a recurring need for the Contractor to maintain a rigorous water-sprinkling schedule during dry and windy periods.

245. Noise levels at residential receptors (Vardanidzor and Agarak) remained stable and generally compliant with national standards (55–65 dB). A positive trend was maintained in vibration management; despite intensified blasting operations for road widening, all measurements at surface sensitive points remained below the 109 dB TLV. The temporary exceedances of the 72 dB limit recorded near Lichk and the Meghri Medical Center in August correlated with baseline data, suggesting that these fluctuations are influenced by regional environmental factors rather than solely by construction activities.

246. The project successfully transitioned from baseline monitoring to active ecological restoration. The planting of 7,500 saplings in November 2025 and the formalization of the 1:2 (1:10 - for Redbook regulated species) compensatory ratio mark a critical milestone in biodiversity compliance. Regarding topsoil management, the systematic non-conformities identified in the previous semester (e.g. at km 38+400) have been fully addressed and closed, reflecting an improved level of site discipline and environmental stewardship by the Contractor.

247. The successful securing of various municipal permits (e.g. Letter E-1836 for topsoil relocation and Decree N 349-A for waste disposal) demonstrates proactive coordination with the Meghri Municipality and the Ministry of Environment. This systematic approach has reduced legal risks and ensured that project-related activities, such as topsoil relocation from private to community lands, are conducted within a transparent legal framework.

4.3 Summary of Monitoring Outcomes

248. The environmental monitoring program for the second half of 2025 indicates that the Project is operating under a maturing safeguards framework.

249. Environmental monitoring was conducted consistently from July to December 2025 through routine inspections, joint field visits, checklists, and instrument-based measurements.

250. Ongoing support from the RDF and the EFSD safeguard specialists through field missions, document reviews and technical feedback contributed significantly to overall project performance.

251. TPEME’s participation in joint site visits and review of CAP implementation enhanced objectivity, technical accuracy, and transparency in monitoring outcomes.

252. The majority of monitored parameters for air, noise, and vibration remained within national permissible

limits and international threshold values.

253. The most notable compliance challenge remains the management of air quality within tunnel environments, where concentrations of particulate matter (PM2.5 and PM10) frequently exceeded safety thresholds during active excavation and shotcreting. In contrast, surface-level monitoring points specifically those near residential receptors, demonstrated a high level of compliance, with dust and noise levels maintained through consistent watering and equipment maintenance.

254. Overall, the Project has demonstrated a positive compliance trend, with substantial progress made in both physical environmental works and administrative legalization. The environmental safeguards system is considered functional and capable of managing the risks associated with the upcoming intensive construction phases.

4.4 Material Resources Utilization

4.4.1 Reporting Period

255. For the reporting period (July–December 2025), the Contractor provided detailed records on the consumption of water, electricity, and other material resources. The following sections summarize resource utilization, reflecting the intensified construction phase and the administrative progress in formalizing utility infrastructure.

256. **Water**: Water supply was maintained through the Meghri community pipeline (managed via the camp landowner's subscription) and abstraction from an unnamed spring located within the camp territory for technical purposes (including batching plant and tunnel-related works). Bottled drinking water was additionally procured from local suppliers for personnel needs. To formalize the spring abstraction and support the process of obtaining a permanent Water Use Permit (WUP), the Contractor engaged the "Hydrometeorology and Monitoring Center" SNCO to undertake the required hydrogeological studies.

257. **Electricity:** The primary power supply was provided through the Electric Network of Armenia CJSC (ENA). Electricity consumption increased during this semester due to the continuous operational requirements for lighting and high-capacity ventilation systems in Tunnel No. 2 and Tunnel No. 3. The Contractor also maintained diesel generators for back-up power and specific site needs, including welding works and bridge pile boring operations at remote locations.

258. **Fuel:** Diesel fuel was utilized for heavy machinery, transport vehicles, and back-up power generation. A centralized fuel storage facility was maintained at km 25+000. In July 2025, the Contractor obtained the State Technical Expertise conclusion (No. 1711) for the fuel storage tanks, as required under national technical safety procedures. The fuel storage area was equipped with secondary containment, firefighting equipment, and spill response tools. Bilingual (Armenian/English) warning signage was installed during the reporting period to strengthen safety awareness and compliance.

259. **Construction Materials:** Major construction materials (including cement, sand, gravel, and steel/rebar) were sourced from licensed local suppliers and stored at secured warehouse areas near the batching plant and auxiliary camp facilities. Aggregate materials were also produced at the Project's authorized crusher plant located at km 25+000.

260. Utilization data for construction materials and utilities (including embankment materials, concrete production, and electricity and water consumption) was tracked on a monthly basis and reported through the Contractor's monitoring documentation to support resource efficiency and compliance

monitoring under the EMP.

Table 17: Construction materials to be produced/ or used within reporting period (July December 2025)

#	Materials	Unit	Delivered during the reporting period
1	Embankment materials	m^3	441,000
2	Concrete	m^3	31,101
3	Wood	Kg	2,245
4	Metal	kg	14,530
5	Asphalt	m^3	0
6	Water	m^3	16,336
7	Electricity	kwt	81,465
8	Gas	m^3	0

Table 18 Cumulative Resource Utilization (July December 2025)

#	Materials	Unit	Previous Total (to June 2025)	Current Period (July–Dec 2025)	Cumulative Total
1	Embankment materials	m^3	410,550	441,000	851,550
2	Concrete	m^3	19,544	31,101	50,645
3	Wood	Kg	1,615	2,245	3,860
4	Metal	kg	27,260	14,530	41,790
5	Asphalt	m^3	0	0	0
6	Water	m^3	7,346.5	16,336	23,682.5
7	Electricity	KWt	274,380	81,465	355,845 *Electrical Network of Armenia (ENA): 322,390 KWt (242,380 KWt previous + 80,010 KWt current)* *Generators (Welding/Site works): 33,455 KWt (32,000 KWt previous + 1,455 KWt current).*

#	Materials	Unit	Previous Total (to June 2025)	Current Period (July–Dec 2025)	Cumulative Total
8	Gas	**m³**	0	0	0

4.5 Waste Management

261. During the reporting period, the Project generated significant volumes of waste across three primary categories. Construction waste, specifically unsuitable soil and rock from tunnel and road excavation, constituted the largest volume.

262. Waste management arrangements remained functional and controlled. All identified deficiencies from previous audits, such as the need for improved waste segregation at the main camp, were addressed through the provision of additional labeled bins and reinforced site-level supervision.

263. The reporting period showed an improvement in the systematic tracking of waste volumes and a proactive approach to legalizing dumping sites. The transition from 11 to 13 active sites was managed with the necessary environmental permits. Continued focus is required to ensure that temporary stockpiles within the RoW do not encroach on sensitive habitats during the winter season.

264. The data related to the waste management within reporting period are presented in Table 19 below

Table 19: Waste generated during the reporting period (July-December 2025)

Type of waste		Waste generated (m^3)	Remarks
		Total	
Construction waste (included unsuitable for road construction excavated materials)		620,000	Removed to the dumping site
Construction related waste	Disposed		Non-significant volumes.
	Re- used		
Household waste		23,230	Collected in bins; removed weekly by Meghri Municipality.
Dangerous/ Hazardous (asphalt)	Disposed		No asphalt removal or production during this period.
	Re- used		
Processed oil		Liters: 31,430	Collected in barrels; 25,200 Liters sold for industrial reuse.

4.6 Cumulative Waste Generation

265. The data related to the cumulative waste within reporting period are presented in Table 20 below.

Table 20: Cumulative Waste Generation

Type of Waste	Previous Total (to June 2025)	Generated during Reporting Period (July–Dec 2025)	Cumulative Total (as of 31 Dec 2025)	Remarks
Construction Waste (unsuitable excavated materials)	1,458,000 m³	620,000 m³	2,078,000 m³	Disposed of across authorized dumping sites.
Household / Domestic Waste	26,870 m³	23,230 m³	50,100 m³	Collected in bins and removed weekly by Meghri Municipality (valid agreement in place).
Processed Oil (Hazardous)	760 L	31,430 L	32,190 L	Stored in barrels; 25,200 L sold for reuse.
Asphalt Waste	0 m³	0 m³	0 m³	No paving/stripping works reported during the period.
Cumulative waste (construction only, dumped)			2,078,000	

4.7 Health and Safety

4.7.1. Workers Health and Safety

266. During the reporting period (July–December 2025), workers' health and safety conditions were monitored through regular inspections, monthly OHS reporting, and site supervision activities, guided by the Health and Safety Management Plan approved by the Engineer. The Project's total workforce reached its peak during this semester, recording 693 personnel in December, with an average workforce ranging between 577 and 689 personnel across the reporting months. Monitoring was conducted on a monthly basis by the Contractor's EHS officers and the Engineer, with supervision by the TPEM team, focusing on workplace safety, hygiene, emergency preparedness and compliance with approved OHS procedures and permits for hazardous works.

267. The reporting period was marked by a severe fatality incident on 18 November 2025 at approximately 11:00 AM. The accident occurred at km 17+100, at the Precast Concrete Bridge Girder Construction Unit, where an employee was struck by falling formwork during dismantling operations. The investigation established that the worker acted independently without coordination with the signalman and crane operator, in violation of established lifting and communication procedures. The incident was investigated on site by the Engineer's EHS Specialist, the Contractor's Health and Safety team, ambulance services, and the police. The incident was classified as a fatal occupational accident, and detailed closing documentation, including the investigation findings and corrective measures, is provided. Following this event, crane operation instructions, lifting procedures, and communication

protocols were revised, and mandatory re-training of crane operators, signalmen, and formwork crews was required.

268. In addition to the fatality, several non-fatal incidents were recorded during the reporting period. On 23 August 2025, at km 20+500, a 25-ton crane operator lost control of the crane while maneuvering along a secondary road, causing the vehicle to veer off the road and fall into a river. Medical examinations confirmed no internal injuries or fractures, and the operator was discharged following specialist evaluation. In December 2025, another incident occurred involving two workers who fell from a cage elevated by an excavator, representing a direct violation of safety norms prohibiting the use of excavators for personnel lifting. Both workers received medical treatment and were discharged without long-term injuries. NCR No. 20 was issued, and corrective actions were required to prevent recurrence.

269. Medical Treatment Cases were reported throughout the reporting period. A total of 49 hospital visits were recorded, primarily related to common illnesses, high blood pressure, and musculoskeletal complaints, including spinal and muscle strains. All affected workers were discharged on the same day following medical assistance, and no lost workdays were reported in relation to these cases. The Contractor maintained safety logbooks, hospital visit records, and incident registers to document and monitor health-related cases.

270. Workers were generally supplied with required PPE, including safety helmets, high-visibility vests, gloves, goggles, respiratory masks, safety harnesses, and appropriate footwear.

271. By the end of the reporting period, PPE distribution included 18,640 pairs of gloves, 5,640 respiratory masks (N95), 520 reflective vests, and 85 safety harnesses. However, repeated cases of improper or incomplete PPE use were observed, particularly among subcontractor personnel and during works at height. NCR No. 15 was initially issued in July 2025 for severe violations at km 19+100, including improper scaffolding and non-use of safety harnesses. Due to repeated non-compliance, the NCR was escalated to Level 3 in September 2025.

272. CAPs were subsequently submitted, implemented, and verified during site monitoring, and the non-conformity was formally closed. Mandatory use of respirators and ear protection (ear plugs and ear muffs) was enforced in Tunnels No. 2 and No. 3 due to elevated dust concentrations and noise levels exceeding 80 dBA.

273. Health and safety training activities were conducted consistently throughout the reporting period. Approximately 1,775 training and awareness activities were completed, including induction trainings, task-specific safety trainings, and toolbox talks. All newly mobilized workers received mandatory HSE induction prior to commencing work. More than 500 toolbox talks were delivered to address site-specific hazards, high-risk activities (works at height, blasting, confined spaces), and lessons learned from recorded incidents. Training matrices and attendance records were maintained and submitted to the Engineer.

274. Worker accommodation camps, including the Main Camp, Aygedzor Camp, and the camp at km 31+200, accommodating approximately 532 persons, were routinely inspected. Camps were equipped with running water, sanitation facilities, lighting, waste collection systems, first aid kits, and medical rooms staffed with trained personnel. Fuel storage facilities at the main camp received a positive State Technical Safety Expertise conclusion (No. 1711), and fire extinguishers, spill containment systems, and warning signage were installed at hazardous areas. While overall welfare standards were

maintained, deficiencies were identified, including insufficient portable toilets at newly established working sites and canteen sanitary non-compliance, both of which were subject to agreed corrective actions.

275. Specific occupational safety risks were identified in Tunnel No. 3, where NCR No. 19 was issued in October 2025 following failure to evacuate personnel during an electricity supply interruption combined with ventilation shutdown. Elevated dust levels (PM_{10} exceedance) were also recorded. The Contractor was instructed to implement evacuation drills, strengthen dust control measures, and introduce mandatory use of full-face respirators with appropriate filters, with corrective actions monitored by the Engineer.

4.7.2. Community health and safety

276. During the reporting period community health and safety aspects were monitored alongside construction activities, with particular attention to traffic safety, blasting-related risks, environmental nuisance (dust, noise, vibration), protection of residential areas and sensitive receptors, and integrity of public and private infrastructure.

277. No community-related incidents or traffic accidents involving third parties were reported during the reporting period, as confirmed by monthly monitoring records and Contractor reports.

278. Traffic management measures were implemented in accordance with approved Traffic Management Plans (TMPs). Approval of the TMP was carried out in a phased manner, on a section-by-section basis. The TMP for Section 1 was finalized and approved by the Road Police (Letter No. 113/25541), followed by the approvals of Section 3 and Sections 2 and 4.

279. The Contractor maintained several detour sections, including the primary detour at km 37+100 (Permit No. 113/45747). In addition, a specific detour at km 21+800 – km 21+980 was implemented and fully furnished with traffic signs, barriers, and safety equipment during November 2025. Site audits confirmed that traffic safety signs, speed limits, warning signals, and physical boundary demarcations (including concrete blocks and fencing) were properly installed and maintained to protect local road users. Permits for de-tours at km 10+800 -km 12+920 and km 22+500 - km 23+700 also were acquired.

280. To prevent secondary dust generation and ensure public safety, the Contractor was instructed to intensify cleaning of public roads used by construction vehicles, particularly in the Agarak and Meghri areas. All trucks transporting construction materials were required to be covered with tarpaulins to prevent fugitive dust emissions along public roads.

281. As tunnel excavation works at Tunnel No. 2 and Tunnel No. 3, as well as road widening activities, intensified during the reporting period, blasting operations were conducted on a regular (including daily) basis in certain sections.

282. The Contractor implemented a strict pre-notification protocol, informing residents of the Meghri and Vardanidzor settlements at least one day in advance of scheduled blasting. Audible sirens were activated immediately prior to detonation, and safety exclusion zones were established and controlled by site security personnel.

283. Special attention was paid to Tunnel No. 3 due to its location within a residential area and its proximity to a medieval church. Social specialists monitored the structural integrity of residential buildings within a 50 m radius, ensuring that mild blasting charges did not adversely affect nearby structures. This

approach demonstrated a precautionary and culturally sensitive approach to construction activities in areas of heritage and social importance.

284. Instrumental monitoring of vibration levels was conducted monthly near residential areas. Minor exceedances recorded in August 2025 were addressed through adjustment of blasting charges and sequencing, after which vibration levels were stabilized to ensure protection of nearby buildings.

285. Dust suppression measures, including regular water spraying, were implemented at active construction sites adjacent to residential areas and agricultural lands. Visual dust generation was identified at km 21+115, prompting immediate instruction to the Contractor to increase the frequency of water truck operations.

286. Noise monitoring indicated elevated noise levels near residential areas during August 2025. Following these observations, the Contractor implemented additional mitigation measures, including improved equipment management and operational controls, which resulted in a documented improvement in noise conditions during September 2025.

287. Seasonal air quality monitoring recorded an increase in SO_2 concentrations near Meghri residential areas in September 2025. Subsequent verification confirmed that this increase was not related to project activities and was attributed to local seasonal fruit-drying practices involving sulfur use.

288. To regulate community-level impacts, the Meghri Community issued Decree No. 349-A on 17 July 2025, authorizing the use of designated community land for waste disposal, ensuring that project waste management activities did not affect communal grazing or agricultural lands.

289. To facilitate restoration of private agricultural land at km 15+200, the Contractor obtained Permit No. E-1836 dated 22 September 2025 for relocation of stockpiled material to community-approved sites, supporting reinstatement of affected land parcels.

290. Furthermore, the Contractor undertook, at its own cost, the repair of sections of the public highway that were damaged during project implementation, ensuring continued safe access and demonstrating responsibility toward local community infrastructure.

291. The GRM remained operational throughout the reporting period. Social specialists conducted site visits and engaged directly with residents potentially affected by construction of Tunnel No. 3, including monitoring of building integrity in adjacent residential areas. No major community-related grievances, incidents, or accidents involving third parties were recorded during the reporting period.

4.8 Training

292. Occupational health and safety training was implemented on a continuous basis to strengthen workers' awareness of site-specific risks, emergency response procedures, and safe working practices. Trainings were delivered by the Contractor's Environmental and Health and Safety specialists under the supervision of the Engineer.

293. All newly mobilized workers underwent mandatory induction training prior to site entry, covering general OHS requirements, site-specific hazards, PPE use, and emergency procedures. Periodic refresher trainings were conducted, with emphasis on high-risk activities such as works at height, blasting, crane operations, excavation, confined spaces and tunnel works.

294. Throughout the reporting period, primary and refresher safety trainings on PPE, general safety, and emergency response engaged between 248 and 357 workers per month, depending on activity levels.

In total, over 1,700 training and safety awareness activities, including formal sessions and toolbox talks, were documented during the semester.

295. Tunnel personnel received daily task-specific safety briefings, focusing on respiratory and hearing protection, drilling, blasting, excavation, and dust and noise mitigation. Participation ranged from 31 to 57 workers, aligned with operational cycles of Tunnel No. 2 and Tunnel No. 3. Following NCR No. 19, evacuation procedures during power and ventilation failures were specifically reinforced.

296. Toolbox talks remained a core element of on-site safety management, with 42 to 210 sessions conducted monthly and participation reaching up to 375 workers during peak periods. These sessions addressed immediate operational risks, lessons learned from non-conformities (including NCR No. 15 related to fall protection), and updates to safe work methods.

297. Following the fatality incident in November 2025, targeted re-training was provided to crane operators, signalmen, and personnel involved in lifting and formwork dismantling activities. Updated crane operation and communication procedures were introduced, and affected personnel completed additional safety verification prior to resuming related works.

4.9 Safety Incident and Nonconformance Summary

298. One fatal occupational accident occurred on 18 November 2025 at km 17+100, at the Precast Concrete Bridge Girder Construction Unit, during dismantling of formwork. The incident was investigated on site by the Engineer's EHS Specialist, the Contractor's Health and Safety team, ambulance services, and the police. An incident investigation and closing report were prepared, and corrective measures, including revision of crane operation instructions, lifting procedures, and communication protocols, were implemented.

299. In addition to the fatality, several non-fatal safety incidents were reported during the semester. These included a crane accident on 23 August 2025 at km 20+500, where a crane veered off the road and fell into a river without causing serious injury, and an incident in December 2025 involving two workers who fell from a cage elevated by an excavator, in violation of safety rules prohibiting the use of excavators for personnel lifting. In all non-fatal cases, injured workers received medical treatment and were discharged without long-term consequences.

300. Safety-related non-conformities were identified primarily in relation to improper use of personal protective equipment, unsafe work practices during works at height, and deficiencies in tunnel safety procedures. NCR No. 15 was issued for severe fall protection violations and escalated due to repeated non-compliance before closure following verification of Corrective Action Plans. NCR No. 19 was issued in relation to tunnel safety, following failure to evacuate personnel during a power and ventilation interruption. NCR No. 20 was issued following the personnel lifting incident involving improper equipment use.

301. All issued non-conformities were subject to corrective actions, including additional training, reinforcement of safety procedures, and enhanced supervision. CAP were monitored by the Engineer, and closure was confirmed upon verification of implementation.

4.10 Summary of Health and Safety Monitoring Outcomes

302. OHS monitoring during the reporting period (July–December 2025) confirmed that the Project maintained a functional administrative and procedural safety framework.

303. However, monitoring outcomes identified systemic weaknesses in field-level supervision and behavioral compliance, particularly during high-risk operations.

304. The fatal accident in November 2025 and two high-potential non-fatal incidents (August crane rollover and December unauthorized personnel lifting) revealed recurring deficiencies in operational control rather than equipment condition. The misuse of construction machinery for personnel lifting and the failure to maintain effective coordination between signalmen, operators, and ground personnel remain the primary contributors to elevated risk.

305. Investigations confirmed that breakdowns in the signalman, operator, and worker communication chain represent the most critical safety vulnerability in lifting operations. As a corrective measure, lifting procedures and communication protocols were revised and linked to mandatory task-specific re-training and supervision requirements.

306. Monitoring in Tunnel No. 2 and Tunnel No. 3 identified repeated exceedances of noise and dust (PM_{10}) thresholds. Control measures were strengthened through mandatory use of enhanced respiratory and hearing protection and reinforced ventilation management. NCR No. 19 was issued following non-compliance with emergency evacuation requirements during a power interruption and was addressed through revised procedures and verified emergency drills.

307. Non-conformities during the reporting period were concentrated in works at height (NCR No. 15), lifting operations, tunnel safety and PPE compliance.

308. Escalation of NCR No. 15 to Level 3 reflected the Engineer's zero-tolerance approach to fall protection failures. Closure of NCRs was granted only after on-site verification of corrective measures and demonstrated behavioral compliance, not solely documentary submission.

5 FUNCTIONING OF THE SSEMP

309. The table below shows the status of specific SSEMP sections.

Table 21: Status of Environmental Plan as per SSEMP required for the Kajaran-Agarak road project, (Tranche 4) as bellows

#	Names of Plans	Status	Comments/Remarks
1	Site-Specific Environmental Management Plan	Completed Updated	The overall SSEMP was updated to include new project developments and TPEME recommendations. In the process of approval,
2	Traffic Management Plan	Completed	Approved
3	Health and Safety and Plan	Completed	Approved
4	Sewage Management Plan	Completed	Approved
5	Hazardous Waste Management Plan	Completed	Approved

#	Names of Plans	Status	Comments/Remarks
6	Solid Waste Management Plan	Completed	Approved
7	Quarry Management Plan	N/Y	Contractor does not operate the quarry
8	HIV & AIDs, and COVID-19	Completed	Approved
9	Camp-site Development Plan	Completed	The SSEMP for the Main Camp was updated and now includes additional camps (Aygedzor and km 31+200).
10	Biodiversity Management Plan including TMP	Approved	Submitted and approved. Tree replanting permits for Areviq NP and Meghri community were obtained in 2025. To be revised to include all areas (inaccessible previously).
11	Dumping sites SEMP	Completed	Approved
12	Topsoil depot site Management plan	Completed	SEMP for km 15+500 and km 38+400 are drafted and approved. Permits for topsoil transfer (km 15+200 to km 16+400) are in place. SEMP for km 16+400 to be drafted.
13	Tunnels	Completed	Tunnel no. 2 EMP is approved. Tunnel no. 3 EMP was drafted, revised, and formally approved by the Engineer in November 2025.
14	Environmental management and monitoring plans	Completed	Approved, Was revised following TPEME recommendations and approved.
14	Batching plant management plan	Completed	Approved
15	Site rehabilitation, landscaping and re-vegetation plan	In Process	Initial drafting has commenced, specifically for areas where construction is nearing completion (eg, topsoil depots).
16	Asphalt plant SEMP	N/A	Contractor will not operate own plant but will purchase the asphalt from the local, approved supplier.

6 GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good Practice

310. The Contractor maintained an operational OHS management framework supported by regular site inspections, monthly OHS reporting, and systematic supervision by the Engineer. Health and safety documentation, including incident logs, NCR registers, and training records, was consistently maintained and made available for review.

311. Importantly, closure of NCRs was conditional upon on-site verification of implemented measures rather than documentary submission alone, reflecting effective application of the Engineer's compliance control mechanisms.

312. Following serious incidents, including the fatal accident in November 2025, the Contractor demonstrated capacity for procedural correction through revision of lifting instructions, communication protocols, and task-specific safety requirements. Targeted re-training of crane operators, signalmen, and lifting crews was conducted prior to resumption of related works.

313. In response to elevated dust and noise levels in Tunnel No. 2 and Tunnel No. 3, enhanced control measures were implemented, including mandatory use of high-efficiency respiratory protection, reinforced ventilation management, and strengthened evacuation procedures. These measures were verified through follow-up monitoring and drills.

314. A high volume of safety training and awareness activities was maintained throughout the reporting period, including induction trainings, refresher courses, and toolbox talks. Training content was progressively adapted to address lessons learned from incidents and non-conformities, particularly for high-risk activities.

315. Worker accommodation camps were generally maintained in operational condition, with access to sanitation, medical support, and first aid. Legal compliance of critical infrastructure, including fuel storage facilities, was confirmed through the issuance of State Technical Safety Expertise Conclusion No. 1711.

6.2 Opportunities for Improvement

316. Based on monitoring results and recorded incidents during July–December 2025, the following targeted recommendations are issued to address recurrent risks and strengthen compliance.

- Implement location-specific, frequency-based watering schedules for high-traffic zones and strictly enforce mandatory tarpaulin coverage for all trucks transporting loose materials.
- Install temporary stabilization measures (e.g., silt fences, barriers) prior to high-intensity works and strengthen blasting debris control through improved sequencing and physical containment.
- Establish clear, visible, semi-permanent RoW markers and reinforce daily supervision. Conduct mandatory boundary briefings for subcontractors before clearing and excavation works.
- Strengthen contractual enforcement, apply targeted monitoring, and conduct subcontractor-specific refresher trainings and toolbox talks.
- Introduce routine testing of backup power systems and apply a zero-tolerance rule

requiring immediate work stoppage and evacuation upon ventilation failure, supported by verified drills.

- Maintain continuous vibration monitoring during blasting and ensure on-site presence of the archaeological specialist in accordance with the 2025 agreement with the Institute of Archaeology.
- Deploy dedicated winter maintenance teams for snow and ice control on haul roads and public access routes and ensure heating safety and preventive treatment of shared roads to reduce third-party accident risks.

7 SUMMARY AND RECOMMENDATIONS

7.1 Summary

317. The Contractor has made notable progress during the reporting period and the majority of Non-Conformance Reports were effectively managed and resolved, leading to their closure.

318. Full institutional mobilization was maintained throughout the period. Environmental, Social, and OHS personnel from the PIU, the Engineer, and the Contractor conducted systematic daily, weekly, and monthly monitoring to ensure compliance with the approved EMP, SSEMPs, and contractual requirements.

319. Environmental supervision was reinforced through regular site inspections, joint monitoring visits, and independent third-party oversight. Instrumental monitoring and verification by the TPEME confirmed general compliance with applicable standards for air quality, noise, vibration, and water quality, while also identifying recurring dust emissions near haul roads as a continuing challenge requiring focused control.

320. Key environmental and regulatory milestones were achieved during the period, including legalization of critical site infrastructure through issuance of the State Technical Expertise conclusion for fuel storage facilities and acquisition of essential water-use permits.

321. Community engagement and grievance management were effectively maintained.

322. Biodiversity and cultural heritage safeguards continued to be implemented. Monitoring of the Tree Replanting Program confirmed ongoing management of approximately 7,500 planted seedlings, while archaeological supervision was maintained in sensitive areas, including the Norashenik complex, through regular site presence, toolbox talks on chance-find procedures, and coordination with national authorities.

323. Environmental and occupational health and safety training activities were implemented on a continuous basis. More than 1,700 training and awareness activities, including inductions, refresher trainings, and toolbox talks, were conducted, with increased emphasis on task-specific safety following identified risks related to crane operations and tunnel emergency response.

324. The Contractor's Social Safeguards Specialist has been regularly present at the site office to address issues raised by the local community in a timely manner and to ensure that the grievance logbook and complaint records are properly maintained. Designated contact persons have been appointed in each community to maintain the logbooks. In addition, dedicated hotline numbers of both the Contractor and the Supervising Engineer have been made available.

7.2 Recommendations

325. The recommendations below should be implemented by the contractor:

- Increase continuous site-level supervision during high-risk activities, particularly lifting operations, works at height, tunnel excavation, and blasting, to prevent procedural deviations and unsafe practices.
- Ensure full implementation and enforcement of revised lifting instructions and communication protocols among crane operators, signalmen, and ground personnel. Unauthorized use of equipment for personnel lifting shall be strictly prohibited.
- Introduce preventive stabilization measures and improved blasting debris control prior to excavation and machinery works on slopes, particularly in proximity to rivers and drainage channels.
- Maintain continuous monitoring of dust and noise levels in tunnels, ensure effectiveness of ventilation systems, and enforce immediate work stoppage and evacuation procedures in case of power or ventilation failure, supported by regular emergency drills.
- Enhance monitoring and enforcement of subcontractor compliance with environmental and OHS requirements, including PPE use, incident reporting, and adherence to site-specific method statements.
- Strengthen physical demarcation of approved Right-of-Way limits and reinforce daily supervision to prevent encroachment and unauthorized vegetation clearance.

326. The recommendations for improvement of environmental compliance by Contractor for identified 42 issues which were not solved within reporting period and described above are summarized in corrective action plan (Please see **Annex 5)**

Annex 1 -Photos of activities during the reporting period

Fig -1-Km 10+780 – beginning of the construction site. 07.07.2025

Fig -2- Km 13+600 – territory of Arevik Park. 07.07.2025

Fig -3 Medical room- 07.07.2025

Fig -4 Km 19+100: Bridge support piles construction. 07.07.2025

Fig -5- Water sprinkler arrived to the site- 24.07.2025

Fig -6-Km 34+400: Dumping site for TU3 24.07.2025

Fig -7 -Km 37+100: bridge beams construction works. Workers equipped by PPE - 13.08.2025

Fig -8- Km 38+400: Topsoil depot. 13.08.2025

Fig -9 -Camp is equipped with firefighting equipment. 13.08.2025

Fig -10 -PPEs are available on site. 13.08.2025

Fig -11-First aid kit is in place. 13.08.2025

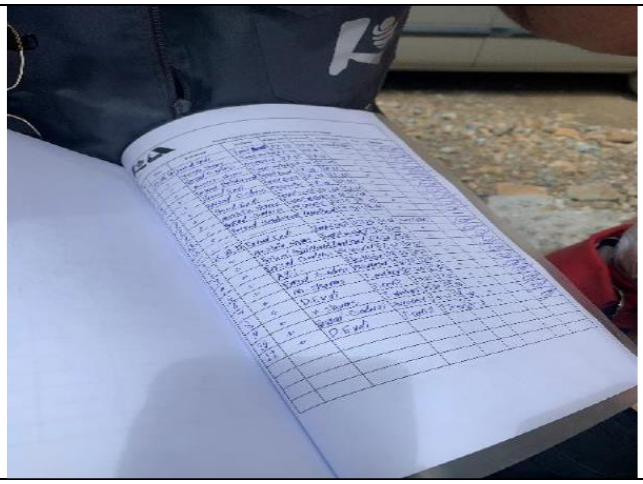


Fig -12-Log-book for tunnel attendees is maintained. 13.08.2025

Fig 13 Joint Monitoring visit by RD's, Engineer's, and Contractor's Environmental Specialists together with specialists of "Arevik" National Park on 11/09/2025.

Fig 14- Km 25+000: Crushing plant construction area. 11.09.2025

Fig 15- Km 25+600 – construction camp, compressed gas cylinders storage area. 11.09.2025

Fig 16-Joint site visit with Contractor and TPEME. Workers in tunnel (RIGHT) are equipped by respirator equipment. 23.10.2025

Fig.17 - Trees planting activities. Photos of 18.11.2025

Fig.18-Km 25+700: Batching plant area. Fuel tanks' storage.17.11.2025

Fig 19- Km 25+700: Batching plant area. stored Oil barrels 17.11.2025

Fig.20-Rebar processing area in the camp - 19.12.2025

Fig.21- Km 27+700: Dumping site. Information stand is available in Armenian and English-19.12.2025

Annex 2 - instrumental monitoring results and laboratory protocols for July, August, September, October, and November 2025

July - 2025

Water monitoring report for samples, taken on 24.07.2025

Meghri River basin water quality parameters (according to the RA Government Decree N 75-N of 27.01. 2011 ON DETERMINING WATER QUALITY ASSURANCE STANDARDS FOR EACH WATERSHED MANAGEMENT AREA DEPENDING ON SITE CHARACTERISTICS.

Quality indicator	QUALITY CLASSIFICATOIN					UNIT
	I	II	III	IV	V	
Dissolved oxygen	>7	>6	>5	>4	<4	mgO2/l
Biochemical oxygen requirements (BOD5)	3	5	9	18	>18	mgO2/l
Chemical oxygen demand (COD) -Cr	10	25	40	80	>80	mgO2/l
Ammonium ion	0.033	0.4	1.2	2.4	>2.4	mgN/l
Nitrite ion	0.009	0.060	0.120	0.300	>0.300	mgN/l
Nitrate ion	0.631	2.500	5.600	11.300	>11.300	mgN/l
Phosphate ion	0.032	0.100	0.200	0.400	>0.400	mg/L
Zinc, general	2.0	100.0	200.0	500.0	>500.0	mcg/l
Copper, general	4.0	24.0	50.0	100.0	>100.0	mcg/l
Chromium, general	1.0	11.0	100.0	250.0	>250.0	mcg/l
Arsenic, general	0.880	20.88	50	100	>100	mcg/L
Cadmium, total	0.036	1.036	2.036	4.036	>4.036	mcg/l
Lead, general	0.18	10.18	25	50	>50	mcg/l
Nickel, total	0.64	10.64	50	100	>100	mcg/l
Molybdenum, total	6	12	24	48	>48	mcg/l
Manganese, general	4	8	16	32	>32	mcg/l
Vanadium. general	1	2	4	8	>8	mcg/L
Cobalt. general	0.121	0.242	0.484	0.968	>0.968	mcg/l
Iron. general	0.071	0.142	0.5	1	>1	mg/l
Calcium	17.0	100	200	300	>300	mg/l
Magnesium	3.5	50	100	200	>200	mg/l
Barium	30	60	120	1000	>1000	mcg/l
Beryllium	0.008	0.016	0.032	100	>100	mcg/l
Potassium	1.5	3.0	6.0	12.0	>12.0	mg/l
Sodium	6.12	12.24	24.48	48.96	>48.96	mg/l
Lithium	7	14	28	56	>56	mcg/l
Boron	80	450	700	1000	>2000	mcg/l
Aluminum	31	62	124	5000	>5000	mcg/l
Selene: general	0.26	20	40	80	>80	mcg/l
Stibium, general	0.44	0.88	1.76	3.52	>3.52	mcg/l
Tin, general	0.07	0.14	0.28	0.56	>0.56	mcg/l
Chemical oxygen demand -Mn	5	10	15	20	>20	մգO2 /L
Total inorganic nitrogen	0.85	4	8	16	>16	mgN/l
Total phosphorus	0.03	0.2	0.4	1	>1	mg/l
Chloride ion	9.23	18.46	150	200	> 200	mg/l
Sulfate ion	16.82	33.64	150	250	> 250	mg/l
Silicate ion	5.32	10.64	21.28	42.56	>42.56	mg Si/l

Quality indicator	QUALITY CLASSIFICATOIN					UNIT
	I	II	III	IV	V	
General mineralization	**163**	**326**	**1000**	**1500* *for irrigation 1000**	**>1500**	**mg/l**
Electrical conductivity	237	474	1000	1500* *for irrigation 1000	>1500	mcUḥứ/cm
Hardness	1.2	10	20	40	<40	mgekv/l
Suspended solids	7.4	8.9	14.8	29.6	>29.6	mg/l
Odor (20°C and 60°C)	<2 (natural)	2 (natural)	2	4	>4	grade
Color:	(natural)	<5 (natural)	20	30	>200	level
PH	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0* *for irrigation 6.5-8.5	<6.5**or**>9.0	-

In accordance with TPEME's recommendation, provided in the Inception report, the decision was made to exclude heavy metals from the monitoring program and to monitor the following parameters;

OD, COD, pH, colour, odour, TSS, phosphates, carbonates, sulphates, nitrates, chlorides, fluorides, bromides, mineralization, and transparency.

Selection of Sampling Locations – July 2025

9 sampling points were selected by the Contractor's Environmental Officer, based on the proximity of construction sites to the Tashtun and Meghri Rivers, as well as previous nonconformity reports related to river pollution from construction materials.

- Sampling points **1** and **2** are covering the construction sites located between the kms 10+750 and km 14+100, 2 NCs, which status is ongoing are issued for this section. The point N 1 (10+750) is located out of the Project and will serve as a baseline for Tashtun river samples.
- Sampling point **3** is near 16+680, as a baseline for Meghri river. Nearby Tunnel N2 construction works and bridge foundation works are ongoing, but there is no interaction with the river.
- Sampling point **4** is near 17+860, as a second baseline for Meghri river, in this point Tashtun river is entering Meghri river.
- Sampling point **5** is downstream the working site near km 21+700
- Sampling point **6** is taken near the construction site at km 24+880 downstream the place with DS 24+100 and riverbed changing place
- Sampling point **7** is taken at km 26+100 downstream the Camp and Batching plant to estimate their activity impact.
- Sampling point **8** is taken near km 28+200
- Sampling point **9** is taken near km 32+540 to estimate construction impact.

Water monitoring for construction section beginning from 10+750 up to 14+100

Sampling points

N 1 – Start point at 10+750 - baseline

N 2 - End point at 14+100

Affected river: Tashtun

The sampling was taken on 24.07.2025 and on 25.07.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 07.08.2025.

The section from 11th to 14th km runs very close to the Tashtun River (part of the Meghri River basin). Starting from August 2024, several non-conformities have been identified by the Engineer, particularly concerning water pollution from dumping materials like soil and stones. For monitoring, Sampling Point N1 was selected as baseline reference not affected by the construction process, located outside of the construction zone.

To assess the impact of construction activities and non-conformities, Sampling Point N2 was taken at the end of the section at 14+100.

The details of monitoring results are on the table below:

Table 1. Tashtun river (Meghri river basin) water quality parameters for km 10+750 and 14+100

		Sampling point N 1				Sampling point N 2			
		Previous period km 10+750		Reporting period km 10+750		Previous period km 14+100		Reporting period Km 14+100	
Quality indicator	**UNIT**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**
Transparency	cm	14	n/a	31	n/a	11	n/a	31	n/a
Suspended solids	mg/l	41.8	V	10.5	III	46.4	V	22.3	IV
Color:	level	15	III	15	III	15	III	15	III
Odor (20°C and 60°C)	grade	0	I	0	I	0	I	0	I
Dissolved oxygen	mgO2/l	7.68	I	7.34	I	7.77	I	7.32	I
pH		7.54		7.64		7.71		7.83	
Carbonate Alkalinity	mg/l	10.5	n/a	10.5	n/a	13.5	n/a	15	n/a
Sulfate ion	mg/l	5.881	I	5.146	I	6.831	I	6.569	I
Chloride ion	mg/l	3.398	I	1.827	I	4.205	I	3.105	I
Fluorides	mg/l	0.0439	n/a	0.074	n/a	0.0976	n/a	0.073	n/a
Nitrates	mgN/l	0.226	I	0.075	I	0.2585	I	0.080	I
Bromide	mg/l	<0.03	n/a	0.055	n/a	<0.03	n/a	0.055	n/a
Phosphate ion	mg/l	0.0258	I	0.0312	I	0.0188	I	0.0108	I
Biochemical oxygen demand (BOD5)	mgO2/l	2.37	I	1.82	I	3.07	II	1.55	I
Chemical oxygen demand (COD) -Cr	mgO2/l	5	I	5	I	5	I	10	I
Electrical conductivity	µS/cm	93.6	I	92	I	128.8	I	134	I
General mineralization	mg/l	61	I	60	I	84	I	87	I

At km 10+750, water quality improved noticeably between the previous and reporting periods. Transparency increased significantly, indicating clearer water. Suspended solids decreased from a poor (Class V) to a much better (Class III) status, reflecting reduced particulate matter. Dissolved oxygen remained high and within Class I, showing stable good oxygenation. pH values rose slightly but stayed within the neutral range. Other major ions such as sulfates, chlorides, and fluorides remained at low and stable levels, all within Class I. Nitrates showed a decline in concentration, maintaining Class I status. Phosphates stayed at very low levels, and both biochemical and chemical oxygen demand slightly improved, remaining within Class I. Overall, the reporting period at km 10+750 shows better water quality than the previous one, particularly due to improved

transparency and reduced suspended solids.

When comparing the two points during the reporting period, km 10+750, which represents the baseline outside construction influence, shows better physical conditions, with higher transparency and lower suspended solids (Class III compared with Class IV at km 14+100). Dissolved oxygen levels are similar at both points and remain in Class I, indicating no oxygen stress. pH is slightly higher at km 14+100 but still within the neutral range. Nitrate and phosphate concentrations remain very low and in Class I at both locations, with no indication of nutrient enrichment or organic pollution. Biochemical oxygen demand is somewhat lower at the baseline point km 10+750, reflecting more stable natural conditions, while slightly higher values at km 14+100 can be linked to construction-related disturbance. Electrical conductivity and mineralization are elevated at km 14+100, suggesting higher dissolved solids due to construction influence. Overall, the baseline point km 10+750 reflects more stable and undisturbed natural quality, while km 14+100 shows minor construction-related impacts, mainly through increased suspended solids and mineral content, though all values remain within acceptable quality limits. At km 14+100, the reporting period is mostly better than the previous one, mainly reflecting improvements toward baseline conditions observed at km 10+750.

- **Km 10+750 (baseline point)** improved notably compared with the previous period, especially in terms of transparency and reduced suspended solids.
- **Comparison of km 10+750 and km 14+100 (reporting period):** the baseline point remains cleaner and less mineralized, while the construction-impacted point at km 14+100 shows slightly higher suspended solids and dissolved minerals.
- **Km 14+100** also improved compared with its previous period, but less significantly than the baseline point, with suspended solids still elevated due to construction influence.

Water monitoring for baseline points N 3 and 4

Sampling points

N 3 – 16+680 as a baseline for Meghri river

N4 – 17+860 as baseline, from the location where the Meghri and Tashtun rivers intersect.

Affected river: Meghri

Table 2. Meghri river water quality parameters for baselines km 16+680 and 17+860

		Sampling point N 3 Meghri				Sampling point N 4			
		Previous period km 16+680		Reporting period Km 16+680		Previous period km 17+860 (May)		Reporting period Km 17+860	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm	31	n/a	**31**	n/a	31	n/a	**31**	n/a
Suspended solids	mg/l	7	I	**2.9**	I	21.5	IV	**8.1**	II
Color:	level	10	III	**10**	III	15	III	**15**	III

		Sampling point N 3 Meghri				Sampling point N 4			
		Previous period km 16+680		Reporting period Km 16+680		Previous period km 17+860 (May)		Reporting period Km 17+860	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Odor (20°C and 60°C)	grade	0	I	0	I	0	I	0	I
Dissolved oxygen	mgO2/l	8	I	7.23	I	9.00	I	7.44	I
pH		7.74		7.92		7.73		7.99	
Carbonate Alkalinity	mg/l	15	n/a	12	n/a	15.0	n/a	13.5	n/a
Sulfate ion	mg/l	17.38	II	26.012	II	6.325	I	12.84	I
Chloride ion	mg/l	3.175	I	6.663	I	2.644	I	5.607	I
Fluorides	mg/l	0.0895	n/a	0.107	n/a	0.086	n/a	0.093	n/a
Bromide	mg/l	<0.03	n/a	0.060	n/a			0.063	n/a
Nitrates	mgN/l	0.2382	I	0.073	I	0.3103	I	0.078	I
Phosphate ion	mg/l	0.0167	I	0.0285	I	0.0161	I	0.0511	II
Biochemical oxygen demand (BOD5)	mgO2/l	3.05	II	1.72	I	3.520	II	1.82	I
Chemical oxygen demand (COD) - Cr	mgO2/l	5	I	5	I	5	I	10	I
Electrical conductivity	µS/cm	155.7	I	222	I	93.4	I	177	I
General mineralization	**mg/l**	101	I	144	I	61	I	115	I

Sampling Point N3 (km 16+680) is located upstream of the construction zone near Tunnel N2 and the bridge foundations. These works currently do not interact directly with the water body. The subsequent point, N4 (km 17+860), is situated at the confluence of the Meghri and Tashtun rivers. Both points are taken as baseline for downstream locations.

At km 16+680 (Meghri River), the reporting period indicates an overall improvement compared with the previous observation. Suspended solids decreased further, confirming more stable clarity conditions. Dissolved oxygen remained at a high level, ensuring consistently good water quality, while pH shifted slightly upward but stayed within the neutral range. Compared with the earlier period, nitrate concentrations decreased, showing more stable baseline values. By contrast, phosphates showed an increase, though still not at concerning levels. Mineral-related indicators such as conductivity and general mineralization rose, together with higher sulfate and chloride concentrations, pointing to slightly more mineralized water. Overall, the point reflects improved physical and oxygen conditions, while some chemical components increased moderately.

At km 17+860 (river crossing Meghri), the reporting period also shows clear improvement compared with the previous one. Suspended solids dropped significantly, moving from unsatisfactory to much better quality, which points to enhanced clarity. Dissolved oxygen remained high and stable, and pH shifted slightly upward within the neutral range. Nitrate concentrations declined markedly in the reporting period. In contrast, phosphate levels increased compared with the earlier measurement, and conductivity, mineralization, and certain ions also rose, though all values remain within acceptable ranges. Taken together, the results reflect a noticeable improvement in physical and oxygen characteristics at this point, while showing some elevation in

mineral and phosphate content.

In the reporting period, both baseline points demonstrated good overall water quality, but with some notable differences. At km 16+680, suspended solids were very low, reflecting clearer conditions compared with km 17+860, where suspended solids, although improved from the previous measurement, still remained higher. Dissolved oxygen levels were similar and within good ranges at both locations, while pH values were slightly higher at km 17+860, though still neutral.

From a chemical perspective, km 16+680 showed higher sulfate, chloride, conductivity, and mineralization values than km 17+860, pointing to more mineralized water at the Meghri River point. By contrast, phosphates were higher at km 17+860, indicating a relative increase at this crossing point compared with Meghri River. Nitrate values were very low at both locations, with only minor differences.

Overall, km 16+680 reflected clearer water with lower suspended solids but more mineralized composition, while km 17+860 showed somewhat higher suspended solids and phosphate levels, but lower mineralization. Both points, however, remained within acceptable quality ranges for baseline conditions.

For the assessment, all downstream points will be compared with km 17+860, since this location better represents the background conditions in the immediate area.

Water monitoring at working site at km 21+700

Sampling points

N 5 – is downstream the working site near km 21+700

Affected river: Meghri

Table 3. Meghri river water quality parameters comparing km 21+700 with km 17+860

		Sampling point N 4 Meghri+Tashtun				Sampling point N 5			
				Reporting period Km 17+860				Reporting period Km 21+700	
Quality indicator	UNIT			Index	Quality			Index	Quality
Transparency	cm			31	n/a			31	n/a
Suspended solids	mg/l			8.1	II			28.1	IV
Color:	level			15	III			20	III
Odor (20°C and 60°C)	grade			0	I			0	I
Dissolved oxygen	mgO2/l			7.44	I			6.99	II
pH				7.99				7.9	
Carbonate Alkalinity	mg/l			13.5	n/a			13.5	n/a

		Sampling point N 4 Meghri+Tashtun				Sampling point N 5			
				Reporting period Km 17+860				Reporting period Km 21+700	
Quality indicator	UNIT			Index	Quality			Index	Quality
Sulfate ion	mg/l			12.84	I			17.95	II
Chloride ion	mg/l			5.607	I			6.168	I
Fluorides	mg/l			0.093	n/a			0.103	n/a
Bromide	mg/l			0.063	n/a			0.062	n/a
Nitrates	mgN/l			0.078	I			0.068	II
Phosphate ion	mg/L			0.0511	II			0.0403	II
Biochemical oxygen demand (BOD5)	mgO2/l			1.82	I			1.79	I
Chemical oxygen demand (COD)-Cr	mgO2/l			10	I			5	I
Electrical conductivity	µS/cm			177	I			217	I
General mineralization	mg/l			115	I			141	I

The water quality at Sampling Point N5 (km 21+700) was compared with the baseline sample from the Meghri and Tashtun Rivers crossing place, taken at km 17+860 (Sampling Point N4).

At km 21+700, the water quality shows clear signs of construction influence, with almost all key parameters worsening in comparison with the baseline at km 17+860. Suspended solids increased sharply, moving into a poor-quality class, while dissolved oxygen decreased and shifted to a lower class. Water color became more pronounced and sulfate concentrations rose, also resulting in a weaker classification. Nitrate levels were higher and moved into a lower class, while phosphates remained at the same class but did not improve. Mineralization and conductivity were considerably higher, reflecting more dissolved material in the water. Only biochemical and chemical oxygen demand remained stable and low. Overall, the results indicate that the section at km 21+700 is affected by construction activities, with water quality degraded across most physical and chemical parameters compared with the baseline conditions. These findings emphasize the importance of maintaining control measures to minimize further deterioration in water clarity and sediment load. Preventive or corrective actions should be implemented.

Water monitoring at working site at km 24+800

Sampling points

N 6 – is downstream the working site near km 24+100-24+800

Affected river: Meghri

Table 4. Meghri river water quality parameters, comparing 24+800 with 17+860

		Sampling point N 4 Meghri+Tashtun				Sampling point N 6			
				Reporting period Km 17+860		Previous period km		Reporting period Km 24+880	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm			31	n/a			31	n/a
Suspended solids	mg/l			8.1	II			17.2	IV
Color:	level			15	III			20	III
Odor (20°C and 60°C)	grade			0	I			0	I
Dissolved oxygen	mgO2/l			7.44	I			7.3	I
pH				7.99				8.23	
Carbonate Alkalinity	mg/l			13.5	n/a			15.75	n/a
Sulfate ion	mg/l			12.84	I			23.35	II
Chloride ion	mg/l			5.607	I			5.511	I
Fluorides	mg/l			0.093	n/a			0.111	n/a
Bromide	mg/l			0.063	n/a			0.068	n/a
Nitrates	mgN/l			0.078	I			0.045	I
Phosphate ion	mg/l			0.0511	II			0.0414	II
Biochemical oxygen demand (BOD5)	mgO2/l			1.82	I			1.36	I
Chemical oxygen demand (COD) -Cr	mgO2/l			10	I			5	I
Electrical conductivity	µS/cm			177	I			226	I
General mineralization	mg/l			115	I			147	I

At km 24+880, the monitoring results indicate the impact of construction activities, with several water quality parameters showing deterioration compared with the baseline at km 17+860. Suspended solids were more than doubled, placing the water into a poor-quality class and demonstrating increased turbidity from construction influence. Water color was more intense, and sulfate concentrations rose sharply, moving into a weaker classification. Dissolved oxygen remained within the best class but showed a slight decline relative to the baseline. Nitrate values were somewhat lower, while phosphates stayed in the same class without improvement. Mineralization and conductivity were considerably higher at this section, reflecting an increase in dissolved content. Biochemical and chemical oxygen demand remained low, indicating no additional organic pressure.

Overall, the results confirm that km 24+880 is affected by construction, with clear signs of degradation in suspended solids, color, and sulfates, as well as increased mineralization. These changes underline the need to strengthen erosion and sediment control measures and ensure regular monitoring to prevent further decline in water quality.

Water monitoring Downstream of the Camp and Batching Plant

Sampling points
N 7 – at km 26+100, downstream the Camp and Batching Plant

Affected river: Meghri

Table 5. Meghri river water quality parameters, comparing 26+100 with 17+860

		Sampling point N 4 Meghri+Tashtun				Sampling point N 7			
				Reporting period Km 17+860		Previous period km 26+100		Reporting period Km 26+100	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm			31	n/a	8	n/a	31	n/a
Suspended solids	mg/l			8.1	II	54.5	V	20.7	IV
Color:	level			15	III	15	III	20	III
Odor (20°C and 60°C)	grade			0	I	0	I	0	I
Dissolved oxygen	mgO2/l			7.44	I	8.09	I	7.11	I
pH				7.99		7.81		8.32	
Carbonate Alkalinity	mg/l			13.5	n/a	16.5	n/a	12.75	n/a
Sulfate ion	mg/l			12.84	I	10.88	I	22.87	II
Chloride ion	mg/l			5.607	I	2.990	I	5.734	I
Fluorides	mg/l			0.093	n/a	0.0862	n/a	0.118	n/a
Bromide	mg/l			0.063	n/a	<0.03	n/a	0.069	n/a
Nitrates	mgN/l			0.078	I	0.2124	I	0.039	I
Phosphate ion	mg/L			0.0511	II	0.0317	I	0.0355	II
Biochemical oxygen demand (BOD5)	mgO2/l			1.82	I	3.03	II	1.59	I
Chemical oxygen demand (COD)-Cr	mgO2/l			10	I	5	I	5	I
Electrical conductivity	µS/cm			177	I	136.5	I	231	I
General mineralization	mg/l			115	I	89	I	150	I

At km 26+100, the monitoring results show evident impact from construction activities when compared with the baseline point at km 17+860. Suspended solids were considerably higher, moving into a poor-quality class and indicating increased sediment load, while transparency remained unchanged in the table but the solids clearly point to reduced clarity. Water color was more pronounced, and sulfate concentrations rose sharply, shifting into a weaker class. Dissolved oxygen remained in a good class but was lower than at the baseline, and pH shifted upward though stayed within neutral range. Nitrate concentrations were lower, while phosphates remained in the same class without improvement. Biochemical oxygen demand was slightly lower than at the baseline, and chemical oxygen demand stayed stable in the best class. Electrical conductivity and general mineralization were clearly higher at km 26+100, showing an increase in dissolved material relative to the baseline.

Overall, km 26+100 demonstrates construction influence with worsening in solids, color, sulfates, and mineralization compared with the baseline conditions. These results underline the need for reinforced erosion and sediment control at this section to minimize further decline in water quality.

Some improvements were recorded at km 26+100 compared with the previous period, including lower phosphate levels and reduced chemical oxygen demand, showing partial recovery despite increases in suspended solids and mineralization.

Water monitoring at km 28+200,

Sampling points
N 8 – at km 28+200,

Affected river: Meghri

Table 6. Meghri river water quality parameters, comparing 28+200 with 17+860

		Sampling point N 4 Meghri+Tashtun				Sampling point N 8			
				Reporting period Km 17+860				Reporting period Km 28+200	
Quality indicator	UNIT			Index	Quality			Index	Quality
Transparency	cm			31	n/a			31	n/a
Suspended solids	mg/l			8.1	II			3.1	I

		Sampling point N 4 Meghri+Tashtun				Sampling point N 8			
				Reporting period Km 17+860				Reporting period Km 28+200	
Quality indicator	UNIT			Index	Quality			Index	Quality
Color:	level			15	III			10	III
Odor (20°C and 60°C)	grade			0	I			0	I
Dissolved oxygen	mgO2/l			7.44	I			7.65	I
pH				7.99				8.56	
Carbonate Alkalinity	mg/l			13.5	n/a			20.25	n/a
Sulfate ion	mg/l			12.84	I			24.15	II
Chloride ion	mg/l			5.607	I			6.517	I
Fluorides	mg/l			0.093	n/a			0.12	n/a
Bromide	mg/l			0.063	n/a			0.073	n/a
Nitrates	mgN/l			0.078	I			0.0113	I
Phosphate ion	mg/l			0.0511	II			0.0054	I
Biochemical oxygen demand (BOD5)	mgO2/l			1.82	I			1.72	I
Chemical oxygen demand (COD)-Cr	mgO2/l			10	I			10	I
Electrical conductivity	µS/cm			177	I			276	I
General mineralization	mg/l			115	I			179	I

The monitoring point at km 28+200 was deliberately selected even though there are no construction activities in its immediate vicinity. Its location directly upstream of the sand-washing facilities of Meghri TSHSHD LLC makes it important for assessing baseline water quality conditions before the effluent from these operations can enter the watercourse. Monitoring at this point allows us to clearly separate the potential impacts of sand-washing from those of the Project's construction activities further downstream. In this way, the data obtained at 28+200 demonstrate that water reaching the downstream construction areas may already be influenced by sand-washing activities, which is essential for accurate interpretation of results. The inclusion of this point also highlights a transparent monitoring approach, showing that the Project considers not only its own activities but also other operations within the watershed that may affect water quality. At km 28+200, water quality remained good and reflects natural upstream conditions. Suspended solids were very low and in the best class, with stable transparency and high dissolved oxygen. Water color was slightly lighter than at the baseline point km 17+860, and both biochemical and chemical oxygen demand remained low, confirming stable conditions. Nitrate concentrations were very low and in the best class, while phosphate levels decreased and also shifted into the best class. Carbonate alkalinity increased compared with the baseline, consistent with higher conductivity and mineralization, but still within natural variability. The main differences compared with the baseline were elevated sulfates, which moved to a weaker class, and clearly higher conductivity and general mineralization, reflecting more dissolved material in the water.

The monitoring results demonstrate that at point 28+200, which is located above the sand-washing facilities and outside of any direct project construction activities, the water quality is already noticeably degraded compared to the upstream baseline. Although transparency corresponds to the natural condition of the river, other

indicators such as color, sulfate content, electrical conductivity, and mineralization show a clear deterioration. This means that the water at this location is already in a rather poor condition, even before reaching the sand-washing site.
The observed pollution is therefore linked not to sand-washing and nearby construction but to other upstream factors such as construction works, agricultural runoff, household wastewater, or othes. For this reason, point 28+200 is a logical choice as a baseline monitoring location, as it helps to distinguish project-related impacts from the background level of contamination and provides a reliable reference for comparing downstream monitoring results.

Здесь я не согласна с анализом. Результаты показывают, что уже на этом участке, где нет строительных работ и промывки песка, вода значительно загрязнена То есть здесь явно нет влияния промывки песка, но ухудшение параметров может быть связано со строительными работами вверх по течению, с сельскохозяйственными работами, загрязнением канализацией частных домов/хозяйств вдоль реки, другими бизнесами. Поэтому, логично выбрать именно эту точку как базовую для сравнения параметров других точек вниз по течению.

Water monitoring near construction section at km 32+560

N **9** is taken near km 32+560 to estimate construction impact.

Affected river: Meghri

Предлагаю сравнить ее с км 28+200.

Table 7. Meghri river water quality parameters, comparing 32+560 with 17+860

		Sampling point N 4 Meghri+Tashtun				Sampling point N 8		Sampling point N 9			
				Reporting period Km 17+860				Previous period km 32+560		Reporting period Km 32+560	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm			31	n/a	31	n/a	6	n/a	4	n/a
Suspended solids	mg/l			8.1	II	3.1	I	101.9	V	83.5	I
Color:	level			15	III	10	III	15	III	15	III
Odor (20°C and 60°C)	grade			0	I	0	I	1	I	0	I
Dissolved oxygen	mgO2/l			7.44	I	7.65	I	8.08	I	7.62	I
pH				7.99		8.56		8.42		8.14	

		Sampling point N 4 Meghri+Tashtun				Sampling point N 8		Sampling point N 9			
				Reporting period Km 17+860				Previous period km 32+560		Reporting period Km 32+560	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Carbonate Alkalinity	mg/l			13.5	n/a	20.25	n/a	14.25	n/a	18.75	n/a
Sulfate ion	mg/l			12.84	I	24.15	II	15.71	I	43.32	III
Chloride ion	mg/l			5.607	I	6.517	I	3.838	I	8.32	I
Fluorides	mg/l			0.093	n/a	0.12	n/a	0.1216	n/a	0.243	n/a
Bromide	mg/l			0.063	n/a	0.073	n/a	<0.03	n/a	0.121	n/a
Nitrates	mgN/l			0.078	I	0.0113	I	0.2292	I	0.101	I
Phosphate ion	mg/l			0.0511	II	0.0054	I	0.0312	I	0.0161	I
Biochemical oxygen demand (BOD5	mgO2/l			1.82	I	1.72	I	3.04	II	2.12	I
Chemical oxygen demand (COD) -Cr	mgO2/l			10	I	10	I	5	I	10	I
Electrical conductivity	µS/cm			177	I	276	I	197	I	380	I
General mineralization	mg/l			115	I	179	I	128	I	179	I

At km 32+560, water quality is clearly worse than at km 28+200. Transparency declined sharply, while suspended solids increased from a good quality class at 28+200 to the poorest class at 32+560. Sulfate concentrations also rose, moving from a moderate to a weaker class, and mineralization and electrical conductivity became higher, indicating more dissolved substances. Biochemical oxygen demand shifted to a worse class, reflecting an increase in organic load.

At the same time, some parameters remained relatively stable: oxygen stayed in a good class, pH was within the normal range, and phosphates, though slightly higher, remained acceptable. Overall, the comparison shows that conditions deteriorate considerably between the two points, which indicates the influence of the sand-washing activities and construction works in this section, contributing to higher solids, stronger mineralization, and a general decline in water quality.

Compared with the previous period at the same location, suspended solids were somewhat lower, showing partial improvement, but values remain very high overall. Other parameters such as oxygen, sulfates, and mineralization stayed elevated, confirming persistent pressure at this section.

AIR quality monitoring for July, 2025

3 sampling points were selected to monitor the air in Tunnel N2, to continue monitoring of Batching plant activities' impact and monitor the construction activities on Meghri residential area near km 35.

N 1 – in Tunnel N 2 (16+300), depth around 150 m. Active movement of various machinery were working in the tunnel N2 during sampling (excavator, trucks, others)

N 2 – Near the batching plant (km 25+600)

There are no residential sections near the points.
The Batching Plant was operated during sampling.

N 3 - Near the residential area of Meghri, at km 34+500, near Tunnel N3. The tablet was placed on a residential building. Everyday blasting activities are implemented in TU N3. Jumbo driller was operated during the sampling. The internal community road passes in 70-80 m distance.

The sampling was implemented for 7 days (17.07.25-24.07.25) and on 25.07.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 07.08.2025.

Results of monitoring:

N	Name of the Tested Indicator	Measurement unit	Threshold daily average concentration	Air 1 - Km 16+300		Air 2 - Km 25+600		Air 3 – Residential area at km 34+050	
				June 2025	Reporting period	June 2025	Reporting period	June 2025	Reporting period
1.	Sulfur dioxide – SO2	mg/m³	0.05	0.0343	0.0250	0.0438	0.0400		0.0536
2.	Nitrogen dioxide – NO2	mg/m³	0.04	0.0318	0.0318	0.0158	0.0324		0.00279

Air Point 1 – km 16+300

Between June 2025 and the reporting period, SO_2 concentrations decreased, moving further below the threshold, which reflects an improvement. NO_2 values remained unchanged, staying below the limit but close to it. Overall, conditions at this point remain within permissible levels, with a positive trend for SO_2.

Air Point 2 – km 25+600

At this point, SO_2 decreased slightly compared with June 2025, also staying below the threshold. NO_2, however, increased more than twofold, though it still remained under the daily limit. This shift indicates a deterioration in NO_2 conditions, likely associated with traffic or machinery emissions in the construction zone, and should be carefully monitored.

Air Point 3 – Residential Area at km 34+500

This location has no previous measurement for comparison, but the current results show SO_2 slightly above the threshold and NO_2 at very low levels. Exceedance of SO_2 in a residential area is concerning and requires immediate corrective actions, such as stricter emission controls on construction equipment, limiting machinery idling times, and reinforcing watering or suppression measures for works that generate combustion gases. Continuous monitoring should be maintained to verify that exceedances are reduced.

Summary

- **Km 16+300:** improvement in SO_2, stable NO_2.
- **Km 25+600:** SO_2 improved slightly, NO_2 increased but remains below limit.
- **Km 34+050 (residential):** SO_2 exceeded the standard; corrective actions are necessary to protect public health, including stricter control of equipment emissions and reinforcement of suppression measures.

August-2025

ANNEX 4. WATER AND AIR MONITORING FOR THE SAMPLES, TAKEN ON 23.08.2025

Water monitoring report for samples, taken on 23.08.2025

Meghri River basin water quality parameters (according to the RA Government Decree N 75-N of 27.01. 2011
ON DETERMINING WATER QUALITY ASSURANCE STANDARDS FOR EACH WATERSHED MANAGEMENT AREA DEPENDING ON SITE CHARACTERISTICS.

Quality indicator	QUALITY CLASSIFICATOIN					UNIT
	I	II	III	IV	V	
Dissolved oxygen	>7	>6	>5	>4	<4	mgO2/l
Biochemical oxygen requirements (BOD5)	3	5	9	18	>18	mgO2/l
Chemical oxygen demand (COD) -Cr	10	25	40	80	>80	mgO2/l
Ammonium ion	0.033	0.4	1.2	2.4	>2.4	mgN/l
Nitrite ion	0.009	0.060	0.120	0.300	>0.300	mgN/l
Nitrate ion	0.631	2.500	5.600	11.300	>11.300	mgN/l
Phosphate ion	0.032	0.100	0.200	0.400	>0.400	mg/l
Zinc, general	2.0	100.0	200.0	500.0	>500.0	mcg/l
Copper, general	4.0	24.0	50.0	100.0	>100.0	mcg/l
Chromium, general	1.0	11.0	100.0	250.0	>250.0	mcg/l
Arsenic, general	0.880	20.88	50	100	>100	mcg/l
Cadmium, total	0.036	1.036	2.036	4.036	>4.036	mcg/l
Lead, general	0.18	10.18	25	50	>50	mcg/l
Nickel, total	0.64	10.64	50	100	>100	mcg/l
Molybdenum, total	6	12	24	48	>48	mcg/l
Manganese, general	4	8	16	32	>32	mcg/l
Vanadium. general	1	2	4	8	>8	mcg/l
Cobalt. general	0.121	0.242	0.484	0.968	>0.968	mcg/l
Iron. general	0.071	0.142	0.5	1	>1	mg/l
Calcium	17.0	100	200	300	>300	mg/l
Magnesium	3.5	50	100	200	>200	mg/l
Barium	30	60	120	1000	>1000	mcg/l
Beryllium	0.008	0.016	0.032	100	>100	mcg/l
Potassium	1.5	3.0	6.0	12.0	>12.0	mg/l
Sodium	6.12	12.24	24.48	48.96	>48.96	mg/l
Lithium	7	14	28	56	>56	mcg/l
Boron	80	450	700	1000	>2000	mcg/l
Aluminum	31	62	124	5000	>5000	mcg/l
Selene: general	0.26	20	40	80	>80	mcg/l
Stibium, general	0.44	0.88	1.76	3.52	>3.52	mcg/l
Tin, general	0.07	0.14	0.28	0.56	>0.56	mcg/l
Chemical oxygen demand - Mn	5	10	15	20	>20	ıfqo2 /l
Total inorganic nitrogen	0.85	4	8	16	>16	mgN/l
Total phosphorus	0.03	0.2	0.4	1	>1	mg/l
Chloride ion	9.23	18.46	150	200	> 200	mg/l
Sulfate ion	16.82	33.64	150	250	> 250	mg/l

Quality indicator	QUALITY CLASSIFICATOIN					UNIT
	I	II	III	IV	V	
Silicate ion	5.32	10.64	21.28	42.56	>42.56	mg Si/l
General mineralization	**163**	**326**	**1000**	**1500* *for irrigation 1000**	**>1500**	**mg/l**
Electrical conductivity	237	474	1000	1500* *for irrigation 1000	>1500	mcUþuf/cm
Hardness	1.2	10	20	40	<40	mgekv/l
Suspended solids	7.4	8.9	14.8	29.6	>29.6	mg/l
Odor (20°C and 60°C)	<2 (natural)	2 (natural)	2	4	>4	grade
Color:	(natural)	<5 (natural)	20	30	>200	level
PH	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0* *for irrigation 6.5-8.5	<6.5or>9.0	-

In accordance with TPEME's recommendation, provided in the Inception report, the decision was made to exclude heavy metals from the monitoring program and to monitor the following parameters;

OD, COD, pH, colour, odour, TSS, phosphates, carbonates, sulphates, nitrates, chlorides, fluorides, bromides, mineralization, and transparency.

Selection of Sampling Locations – August 2025

8 sampling points were selected by the Contractor's Environmental Officer, and approved by the Engineer's EHS specialist based on the proximity of construction sites to the Tashtun and Meghri Rivers, as well as previous nonconformity reports related to river pollution from construction materials.

- Sampling points **1** and **2** are covering the construction sites located between the kms 10+750 and km 14+100, 2 NCs, which status is ongoing are issued for this section. The point N 1 (10+750) is located out of the Project and will serve as a baseline for Tashtun river samples.
- Sampling point **3** is near 16+680, as a baseline for Meghri river. Nearby Tunnel N2 construction works and bridge foundation works are ongoing, but there is no interaction with the river.
- Sampling point **4** is near 17+860, as a second baseline for Meghri river, in this point Tashtun river is entering Meghri river.
- Sampling point **5** is taken near the construction site at km 24+780 downstream the place with dumping site (DS)24+100 and riverbed changing place
- Sampling point **6** is taken at km 26+100 downstream the Camp and Batching plant to estimate their activity impact.
- Sampling point **7** is taken near km 29+040 as upstream point for 32+540 construction site.
- Sampling point **8** is taken downstream km 32+540 to estimate construction impact.

Water monitoring for construction section beginning from 10+750 up to 14+100

Sampling points

N 1 – Start point at 10+750 - baseline

N 2 - End point at 14+100

Affected river: Tashtun

The sampling was taken on 23.08.2025 and on 25.08.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 17.09.2025.

The section from 11th to 14th km runs very close to the Tashtun River (part of the Meghri River basin). Starting from August 2024, several non-conformities have been identified by the Engineer, particularly concerning water pollution from dumping materials like soil and stones. For monitoring, Sampling Point N1 was selected as baseline reference not affected by the construction process, located outside of the construction zone.

To assess the impact of construction activities and non-conformities, Sampling Point N2 was taken at the end of the section at 14+100.

The details of monitoring results are on the table below:

Table 1. Tashtun river (Meghri river basin) water quality parameters for km 10+750 and 14+100

		Sampling point N 1				Sampling point N 2			
		Previous period km 10+750		Reporting period km 10+750		Previous period km 14+100		Reporting period Km 14+100	
Quality indicator	**UNIT**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**
Transparency	cm	**31**	**n/a**	31	**n/a**	**31**	**n/a**	**5**	**n/a**
Suspended solids	mg/l	**10.5**	**III**	13	**III**	**22.3**	**IV**	40.2	**V**
Color:	level	**15**	**III**	15	**III**	**15**	**III**	15	**III**
Odor (20°C and 60°C)	grade	**0**	**I**	0	**I**	**0**	**I**	1	**I**
Dissolved oxygen	mgO2/l	**7.34**	**I**	7.16	**I**	**7.32**	**I**	7.05	**I**
pH		**7.64**		7.7		**7.83**		7.9	
Carbonate Alkalinity	mg/l	**10.5**	**n/a**	12	**n/a**	**15**	**n/a**	15	**n/a**
Sulfate ion	mg/l	**5.146**	**I**	7.769	**I**	**6.569**	**I**	11.32	**I**
Chloride ion	mg/l	**1.827**	**I**	2.958	**I**	**3.105**	**I**	5.129	**I**
Fluorides	mg/l	**0.074**	**n/a**	0.0732	**n/a**	**0.073**	**n/a**	0.0870	**n/a**
Nitrates	mgN/l	**0.075**	**I**	0.246	**I**	**0.080**	**I**	**0.185**	**I**
Bromide	mg/l	**0.055**	**n/a**	<0.03	**n/a**	**0.055**	**n/a**	<0.03	**n/a**
Phosphate ion	mg/l	**0.0312**	**I**	0.0141	**I**	**0.0108**	**I**	0.0222	**I**
Biochemical oxygen demand (BOD5)	mgO2/l	**1.82**	**I**	2.27	**I**	**1.55**	**I**	2.25	**I**
Chemical oxygen demand (COD) -Cr	mgO2/l	**5**	**I**	5	**I**	**10**	**I**	5	**I**
Electrical conductivity	µS/cm	**92**	**I**	133	**I**	**134**	**I**	210	**I**
General mineralization	mg/l	**60**	**I**	**86**	**I**	**87**	**I**	**137**	**I**

At km 10+750, conditions between the previous and reporting periods remained stable. Transparency stayed the same, and suspended solids remained within the same quality class. Dissolved oxygen continued to be high and within Class I, confirming stable oxygenation. pH shifted slightly upward but stayed neutral. Sulfates, chlorides, and fluorides increased only marginally and remained very low. Biochemical and chemical oxygen demand showed minor variations but stayed within Class I. Conductivity and

mineralization rose moderately but did not affect the overall quality class. Overall, this point shows stable water quality with no significant changes over time.

At km 14+100, the reporting period indicates deterioration in physical parameters. Transparency dropped significantly, and suspended solids shifted to the poorest class, pointing to heavy turbidity and sediment load. Dissolved oxygen remained within Class I despite this increase in solids. pH rose slightly but stayed neutral. Sulfates and chlorides increased but remained low and within Class I. Biochemical oxygen demand rose somewhat but stayed in Class I, while chemical oxygen demand decreased, reflecting a slight improvement. Conductivity and mineralization increased substantially, showing a higher load of dissolved solids. Overall, water at this point deteriorated in physical clarity and mineral content, though chemical indicators remained acceptable.

Comparison of the two points during the reporting period shows that km 14+100 is directly influenced by construction. The sharp rise in suspended solids and loss of transparency point to sediment disturbance and surface runoff from ongoing works. The increase in conductivity and mineralization also reflects construction inputs, indicating a higher dissolved load. While oxygen and chemical parameters remain within safe ranges, the physical deterioration at this point demonstrates localized impact linked to project activities.

- Km 10+750 stayed stable with no meaningful changes between periods.
- Km 14+100 worsened in suspended solids and transparency and showed higher mineralization, directly connected with construction influence. It should be noted that cleaning works started at km 12+000 and are going downstream step by step.
- Despite these impacts, oxygenation and chemical quality remain within acceptable classes.

Water monitoring for baseline points N 3 and 4

Sampling points

N 3 – 16+680 as a baseline for Meghri river

N4 – 17+860 as baseline, from the location where the Meghri and Tashtun rivers intersect.

Affected river: Meghri

Table 2. Meghri river water quality parameters for baselines km 16+680 and 17+860

		Sampling point N 3 Meghri				Sampling point N 4			
		Previous period km 16+680		Reporting period Km 16+680		Previous period km 17+860		Reporting period Km 17+860	
Quality indicator	**UNIT**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**
Transparency	cm	**31**	n/a	31	n/a	**31**	n/a	31	n/a
Suspended solids	mg/l	**2.9**	**I**	7.4	**I**	**8.1**	II	10.2	**III**

		Sampling point N 3 Meghri				Sampling point N 4			
		Previous period km 16+680		Reporting period Km 16+680		Previous period km 17+860		Reporting period Km 17+860	
Quality indicator	**UNIT**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**
Color:	level	**10**	III	10	III	**15**	III	15	III
Odor (20°C and 60°C)	grade	**0**	I	1	I	**0**	I	0	I
Dissolved oxygen	mgO2/l	**7.23**	I	7.26	I	**7.44**	I	7.36	I
pH		**7.92**		7.8		**7.99**		8.2	
Carbonate Alkalinity	**mg/l**	**12**	n/a	13.5	n/a	**13.5**	n/a	15	n/a
Sulfate ion	mg/l	**26.012**	II	33.77	III	**12.84**	I	16.66	I
Chloride ion	mg/l	**6.663**	**I**	6.510	**I**	**5.607**	**I**	8.416	**I**
Fluorides	mg/l	**0.107**	n/a	0.157	n/a	**0.093**	n/a	0.128	n/a
Bromide	mg/l	**0.060**	n/a	0.0306	n/a	**0.063**	n/a	<0.03	n/a
Nitrates	mgN/l	**0.073**	**I**	0.101	**I**	**0.078**	**I**	0.150	**I**
Phosphate ion	mg/l	**0.0285**	**I**	0.0292	**I**	**0.0511**	II	0.0763	**II**
Biochemical oxygen demand (BOD5)	mgO2/l	**1.72**	**I**	2.36	**I**	**1.82**	**I**	2.48	**I**
Chemical oxygen demand (COD) -Cr	mgO2/l	**5**	I	5	I	**10**	I	5	I
Electrical conductivity	µS/cm	**222**	**I**	284	**II**	**177**	**I**	258	**II**
General mineralization	**mg/l**	**144**	**I**	**185**	**II**	**115**	**I**	**168**	**II**

Sampling Point N3 (km 16+680) is located upstream of the construction zone near Tunnel N2 and the bridge foundations. These works currently do not interact directly with the water body. The subsequent point, N4 (km 17+860), is situated at the confluence of the Meghri and Tashtun rivers. Both points are taken as baseline for downstream locations.

At km 16+680 (Meghri River), the reporting period shows a decline in physical quality compared with the previous observation. Suspended solids increased, though still within good quality, indicating some loss of clarity. Dissolved oxygen remained stable at a high level, while pH shifted slightly downward but stayed neutral. Sulfates, conductivity, and general mineralization increased, moving these parameters into a higher class, showing a more mineralized composition. Chlorides and fluorides remained low and stable, while phosphates showed little change. Overall, the point reflects stable oxygen conditions but with more mineralization compared with the previous measurement.

At km 17+860 (river crossing Meghri), the reporting period also shows deterioration in several parameters. Suspended solids increased further, keeping the point in the same class as before but with higher values.

Dissolved oxygen remained high and stable, and pH rose slightly but stayed neutral. Compared with the earlier observation, phosphates increased, moving into a higher class, and conductivity and mineralization also increased, crossing into a higher class. Sulfates rose but stayed within acceptable range. Overall, the point shows stable oxygen conditions but more pronounced chemical changes, with phosphate enrichment and higher mineralization.

When comparing the two points in the reporting period, km 16+680 reflected lower suspended solids and thus clearer water than km 17+860. Dissolved oxygen was equally high at both sites, while pH was slightly higher at km 17+860. Chemically, km 16+680 showed higher sulfate, conductivity, and mineralization values, while km 17+860 displayed higher phosphates and somewhat higher suspended solids. Both points remain suitable for baseline characterization, but they emphasize different aspects: km 16+680 represents clearer but more mineralized water, while km 17+860 reflects higher particulate and phosphate load.

For baseline purposes, km 17+860 should be used as the main reference, since it is located at the confluence of Meghri and Tashtun rivers and better represents the natural background conditions for the downstream sections.

Water monitoring at working site at km 24+780

Sampling points

N 5 – is downstream the working site near km 24+100-24+750

Affected river: Meghri

Table 3. Meghri river water quality parameters, comparing 24+780 with 17+860

		Sampling point N 4 Meghri+Tashtun				Sampling point N 5			
				Reporting period Km 17+860		Previous period km 24+880		Reporting period Km 24+780	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm			31	n/a	31	n/a	31	n/a
Suspended solids	mg/l			10.2	III	17.2	IV	10.7	III
Color:	level			15	III	20	III	15	III
Odor (20°C and 60°C)	grade			0	I	0	I	0	I
Dissolved oxygen	mgO2/l			7.36	I	7.3	I	6.85	II
pH				8.2		8.23		8.2	
Carbonate Alkalinity	mg/l			15	n/a	15.75	n/a	14.25	n/a
Sulfate ion	mg/l			16.66	I	23.35	II	35.85	III
Chloride ion	mg/l			8.416	I	5.511	I	7.174	I
Fluorides	mg/l			0.128	n/a	0.111	n/a	0.579	n/a
Bromide	mg/l			<0.03	n/a	0.068	n/a	<0.03	n/a

		Sampling point N 4 Meghri+Tashtun				Sampling point N 5			
				Reporting period Km 17+860		Previous period km 24+880		Reporting period Km 24+780	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Nitrates	mgN/l			0.150	I	0.045	I	0.070	I
Phosphate ion	mg/L			0.0763	II	0.0414	II	0.00649	I
Biochemical oxygen demand (BOD5)	mgO2/l			2.48	I	1.36	I	1.88	I
Chemical oxygen demand (COD) -Cr	mgO2/l			5	I	5	I	5	I
Electrical conductivity	µS/cm			258	II	226	I	311	II
General mineralization	mg/l			168	II	147	I	202	II

At km 24+780 (N5), the reporting period shows clear differences when compared with the baseline at km 17+860 (N4). Suspended solids were higher, keeping this section in a weaker class and indicating increased turbidity from construction works. Water color was more pronounced, and sulfates rose sharply, shifting to a poorer class. Dissolved oxygen dropped into a lower class, pointing to reduced oxygenation. Conductivity and general mineralization also increased, showing a higher dissolved load in the water. In contrast, phosphates improved to Class I, and nitrates remained low. Biochemical and chemical oxygen demand stayed stable and low.

In comparison with the previous reporting period at this point, suspended solids and mineralization remain elevated, confirming a continued influence from construction, though without major new deterioration. Overall, N5 shows degradation relative to the baseline, particularly through suspended solids, sulfates, and mineral content, underlining the ongoing effect of construction activities.

Water monitoring Downstream of the Camp and Batching Plant

Sampling points

N 6 – at km 26+100, downstream the Camp and Batching Plant

Affected river: Meghri

Table 4. Meghri river water quality parameters, comparing 26+100 with 17+860

		Sampling point N 4 Meghri+Tashtun				Sampling point N 6			
				Reporting period Km 17+860		Previous period km 26+100		Reporting period Km 26+100	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm			31	n/a	31	n/a	31	n/a
Suspended solids	mg/l			10.2	III	20.7	IV	12	III
Color:	level			15	III	20	III	15	III
Odor (20°C and 60°C)	grade			0	I	0	I	0	I
Dissolved oxygen	mgO2/l			7.36	I	7.11	I	6.96	II
pH				8.2		8.32		8.1	
Carbonate Alkalinity	mg/l			15	n/a	12.75	n/a	15.75	n/a
Sulfate ion	mg/l			16.66	I	22.87	II	34.91	III
Chloride ion	mg/l			8.416	I	5.734	I	6.978	I
Fluorides	mg/l			0.128	n/a	0.118	n/a	0.303	n/a
Bromide	mg/l			<0.03	n/a	0.069	n/a	<0.03	n/a
Nitrates	mgN/l			0.150	I	0.039	I	0.058	I
Phosphate ion	mg/l			0.0763	II	0.0355	II	0.0179	I
Biochemical oxygen demand (BOD5)	mgO2/l			2.48	I	1.59	I	2.33	I
Chemical oxygen demand (COD)-Cr	mgO2/l			5	I	5	I	5	I
Electrical conductivity	µS/cm			258	II	231	I	319	II
General mineralization	mg/l			168	II	150	I	207	II

At km 26+100, the reporting period results indicate evident construction-related influence compared with the baseline at km 17+860. Suspended solids were higher, moving into a weaker class, and showing increased sediment input despite unchanged transparency values in the table. Sulfate concentrations rose sharply, shifting into a poorer class, while water color remained at the same level. Dissolved oxygen declined into a lower class compared with the baseline, and pH was slightly higher though still within the neutral range. Nitrate concentrations were lower, while phosphate values improved to the best class. Biochemical oxygen demand was somewhat higher than at the baseline, while chemical oxygen demand remained unchanged. Conductivity and general mineralization were clearly higher at km 26+100, reflecting additional dissolved load.

Overall, the results confirm construction impact at km 26+100, primarily through elevated suspended solids, sulfates, and mineralization, together with reduced oxygenation. These changes emphasize the need to reinforce erosion and sediment control at this section.

In comparison with the previous period, some improvements are noted, including lower phosphate values and stable chemical oxygen demand. However, suspended solids and mineralization remain higher, indicating that while partial recovery is occurring, construction influence continues to affect water quality.

Water monitoring near construction section at km 32+560

N **7** is taken near km 29+040 as a point located downstream the sand-washing factory of Meghri TSHSHD and upstream point for Km 32+540.

N **8** is taken 50mdownstream km 32+540 to estimate construction impact.

Affected river: Meghri

Table 5. Meghri river water quality parameters, comparing 32+590 with 17+860

		Sampling point N 4 Meghri+Tashtun				Sampling point N 7		Sampling point N 8			
				Reporting period Km 17+860		Reporting period Km 29+040		Previous period km 32+590		Reporting period Km 32+590	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm			31	n/a	0	n/a	4	n/a	1	n/a
Suspended solids	mg/l			10.2	III	3156.5	I	83.5	I	178.2	I
Color:	level			15	III	10	III	15	III	10	III
Odor (20°C and 60°C)	grade			0	I	0	I	0	I	1	I
Dissolved oxygen	mgO2/l			7.36	I	7.28	I	7.62	I	7.33	I
pH				8.2		8.0		8.14		7.9	
Carbonate Alkalinity	mg/l			15	n/a	17.25	n/a	18.75	n/a	23.25	n/a
Sulfate ion	mg/l			16.66	I	46.63	II	43.32	III	48.042	III
Chloride ion	mg/l			8.416	I	9.870	II	8.32	I	8.423	I
Fluorides	mg/l			0.128	n/a	0.582	n/a	0.243	n/a	0.364	n/a
Bromide	mg/l			<0.03	n/a	<0.03	n/a	0.121	n/a	<0.03	n/a
Nitrates	mgN/l			0.150	I	0.349	I	0.101	I	0.386	I

		Sampling point N 4 Meghri+Tashtun				Sampling point N 7		Sampling point N 8			
				Reporting period Km 17+860		Reporting period Km 29+040		Previous period km 32+590		Reporting period Km 32+590	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Phosphate ion	mg/l			0.0763	II	0.0617	I	0.0161	I	0.0124	I
Biochemical oxygen demand (BOD5	mgO2/l			2.48	I	1.15	I	2.12	I	1.06	I
Chemical oxygen demand (COD) -Cr	mgO2/l			5	I	10	I	10	I	5	I
Electrical conductivity	µS/cm			258	II	407	II	380	I	454	II
General mineralization	mg/l			168	II	265	II	179	I	295	II

At km 29+040 (N7), located downstream of the sand washing facility, the reporting results show drastic deterioration compared with the baseline at km 17+860 (N4). Transparency dropped completely, and suspended solids reached extremely high levels, clearly indicating direct discharge of fine material from the facility. Sulfates, chlorides, conductivity, and mineralization were all elevated, confirming a heavily altered composition. Dissolved oxygen remained in a good class, but the physical and mineral changes demonstrate a strong localized impact from sand washing operations.

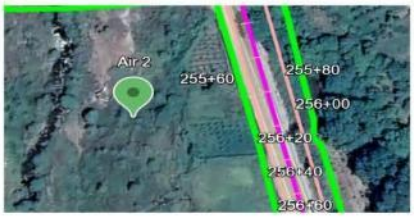
At km 32+560 (N8), conditions improved compared with N7 but still showed deterioration relative to the baseline. Transparency remained poor, and suspended solids, while lower than at N7, were still considerably higher than at km 17+860. Sulfates and mineralization remained elevated, and conductivity was also higher, reflecting a combination of construction-related disturbance and residual influence from the sand washing facility. Dissolved oxygen stayed within good levels and pH remained neutral, but the physical and mineral parameters confirm continued impact.

Overall, N7 reflects the most severe effect due to sand washing, with extreme solids and mineral enrichment, while N8 shows partial recovery downstream yet remains affected by both construction activities and sand washing discharges.

AIR quality monitoring for August, 2025

3 sampling points were selected to monitor the air in Tunnel N2, to continue monitoring of Batching plant activities' impact and monitor the construction activities on Meghri residential area near km 35.

N 1 – in Tunnel N 2 (16+380), depth around 230 m. Active movement of various machinery were working in the tunnel N2 during sampling (excavator, trucks, others)
N 2 – Near the batching plant (km 25+600)



There are no residential sections near the points.
The Batching Plant was operated during sampling.

N 3 - Near the residential area of Meghri, at km 34+500, near Tunnel N3. The tablet was placed on a residential building. Everyday blasting activities are implemented in TU N3. Jumbo driller was operated during the sampling. The internal community road passes in 70-80 m distance.

The sampling was implemented for 7 days (16.08.25-23.08.25) and on 25.08.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 17.09.2025.

Results of monitoring:

N	Name of the Tested Indicator	Measurement unit	Threshold daily average concentration	Air 1 - Km 16+380		Air 2 - Km 25+600		Air 3 – Residential area at km 34+050	
				July 2025	Reporting period	July 2025	Reporting period	July 2025	Reporting period
1.	Sulfur dioxide – SO2	mg/m³	0.05	0.0250	0.0345	0.0400	0.0479	0.0536	0.0544
2.	Nitrogen dioxide – NO2	mg/m³	0.04	0.0318	0.0389	0.0324	0.0292	0.00279	0.00586

Air Point 1 – km 16+380

Between July 2025 and the reporting period, SO_2 concentrations increased but still remained well below the threshold. NO_2 values also rose slightly, remaining under the limit though closer to the permissible level. Overall, air quality at this point remains within standards, though the upward trend in both indicators should be followed carefully.

Air Point 2 – km 25+600

At this location, SO_2 increased compared with July 2025 but remained below the threshold. NO_2 values decreased notably, staying well within the limit. This indicates some improvement compared with the previous period, though the rise in SO_2 suggests continued influence from construction equipment and traffic emissions that should be controlled.

Air Point 3 – Residential Area at km 34+500

In the residential zone, SO_2 levels slightly increased compared with July 2025 and remained above the threshold, confirming exceedance. NO_2 values, although very low, increased slightly compared with the previous period but are still negligible. The persistence of SO_2 exceedance in a residential setting is a concern and requires reinforcement of mitigation measures, including stricter controls on equipment emissions, limiting machinery idling, and ensuring consistent suppression practices.

Summary

- **Km 16+380:** both SO_2 and NO_2 increased but remain within permissible limits; trends should be carefully monitored.
- **Km 25+600:** SO_2 rose but stayed compliant; NO_2 improved significantly, indicating reduced emissions.
- **Km 34+050 (residential):** SO_2 continues to exceed the standard, requiring immediate corrective actions to protect residents, while NO_2 remains very low.

September 2025

ANNEX 4. WATER AND AIR MONITORING FOR THE SAMPLES, TAKEN ON 27.09.2025

Water monitoring report for samples, taken on 27.09.2025

Meghri River basin water quality parameters (according to the RA Government Decree N 75-N of 27.01. 2011
ON DETERMINING WATER QUALITY ASSURANCE STANDARDS FOR EACH WATERSHED MANAGEMENT AREA DEPENDING ON SITE CHARACTERISTICS.

Quality indicator	QUALITY CLASSIFICATOIN					UNIT
	I	II	III	IV	V	
Dissolved oxygen	>7	>6	>5	>4	<4	mgO2/l
Biochemical oxygen requirements (BOD5)	3	5	9	18	>18	mgO2/l
Chemical oxygen demand (COD) -Cr	10	25	40	80	>80	mgO2/l
Ammonium ion	0.033	0.4	1.2	2.4	>2.4	mgN/l
Nitrite ion	0.009	0.060	0.120	0.300	>0.300	mgN/l
Nitrate ion	0.631	2.500	5.600	11.300	>11.300	mgN/l
Phosphate ion	0.032	0.100	0.200	0.400	>0.400	mg/l
Zinc, general	2.0	100.0	200.0	500.0	>500.0	mcg/l
Copper, general	4.0	24.0	50.0	100.0	>100.0	mcg/l
Chromium, general	1.0	11.0	100.0	250.0	>250.0	mcg/l
Arsenic, general	0.880	20.88	50	100	>100	mcg/l
Cadmium, total	0.036	1.036	2.036	4.036	>4.036	mcg/l
Lead, general	0.18	10.18	25	50	>50	mcg/l
Nickel, total	0.64	10.64	50	100	>100	mcg/l
Molybdenum, total	6	12	24	48	>48	mcg/l
Manganese, general	4	8	16	32	>32	mcg/l
Vanadium. general	1	2	4	8	>8	mcg/l
Cobalt. general	0.121	0.242	0.484	0.968	>0.968	mcg/l
Iron. general	0.071	0.142	0.5	1	>1	mg/l
Calcium	17.0	100	200	300	>300	mg/l
Magnesium	3.5	50	100	200	>200	mg/l
Barium	30	60	120	1000	>1000	mcg/l
Beryllium	0.008	0.016	0.032	100	>100	mcg/l
Potassium	1.5	3.0	6.0	12.0	>12.0	mg/l
Sodium	6.12	12.24	24.48	48.96	>48.96	mg/l
Lithium	7	14	28	56	>56	mcg/l
Boron	80	450	700	1000	>2000	mcg/l
Aluminum	31	62	124	5000	>5000	mcg/l
Selene: general	0.26	20	40	80	>80	mcg/l
Stibium, general	0.44	0.88	1.76	3.52	>3.52	mcg/l
Tin, general	0.07	0.14	0.28	0.56	>0.56	mcg/l
Chemical oxygen demand - Mn	5	10	15	20	>20	ufqo2 /l
Total inorganic nitrogen	0.85	4	8	16	>16	mgN/l
Total phosphorus	0.03	0.2	0.4	1	>1	mg/l
Chloride ion	9.23	18.46	150	200	> 200	mg/l
Sulfate ion	16.82	33.64	150	250	> 250	mg/l

Quality indicator	QUALITY CLASSIFICATOIN					UNIT
	I	II	III	IV	V	
Silicate ion	5.32	10.64	21.28	42.56	>42.56	mg Si/l
General mineralization	**163**	**326**	**1000**	**1500* *for irrigation 1000**	**>1500**	**mg/l**
Electrical conductivity	237	474	1000	1500* *for irrigation 1000	>1500	mcUþıí/cm
Hardness	1.2	10	20	40	<40	mgekv/l
Suspended solids	7.4	8.9	14.8	29.6	>29.6	mg/l
Odor (20°C and 60°C)	<2 (natural)	2 (natural)	2	4	>4	grade
Color:	(natural)	<5 (natural)	20	30	>200	level
PH	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0* *for irrigation 6.5-8.5	<6.5or>9.0	-

In accordance with TPEME's recommendation, provided in the Inception report, the decision was made to exclude heavy metals from the monitoring program and to monitor the following parameters;

OD, COD, pH, colour, odour, TSS, phosphates, carbonates, sulphates, nitrates, chlorides, fluorides, bromides, mineralization, and transparency.

Selection of Sampling Locations – September 2025

10 sampling points were selected by the Contractor's Environmental Officer, and approved by the Engineer's EHS specialist based on the proximity of construction sites to the Tashtun and Meghri Rivers, as well as previous nonconformity reports related to river pollution from construction materials.

- Sampling points 1 and **2** are covering the construction sites located between the kms 10+750 and km 14+100, 2 NCs, which status is ongoing are issued for this section. The point N 1 (10+750) is located out of the Project and will serve as a baseline for Tashtun river samples.
- Sampling point **3 and 4** are upstream and downstream the working site at 16+640, where bridge foundation construction work is going on.
- Sampling point **5 and 6** are upstream and downstream the working section 21+400-21+800, where bridge foundation construction work is going on.
- Sampling point **7 and 8** are upstream and downstream the working section 25+000-26+000, where crushing plant, batching plant and main camp are located.
- Sampling point **9 and 10** are upstream and downstream the working section 32+100-32+500, where excavation work is going on.

Water monitoring for construction section beginning from 10+750 up to 14+100

Sampling points

N 1 – Start point at 10+750 - baseline

N 2 - End point at 14+100

Affected river: Tashtun

The sampling was taken on 27.09.2025 and on 29.09.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 23.10.2025.

The section from 11th to 14th km runs very close to the Tashtun River (part of the Meghri River basin). Starting from August 2024, several non-conformities have been identified by the Engineer, particularly concerning water pollution from dumping materials like soil and stones. For monitoring, Sampling Point N1 was selected as baseline reference not affected by the construction process, located outside of the construction zone.

To assess the impact of construction activities and non-conformities, Sampling Point N2 was taken at the end of the section at 14+100.

The details of monitoring results are on the table below:

Table 1. Tashtun river (Meghri river basin) water quality parameters for km 10+750 and 14+100

		Sampling point N 1				Sampling point N 2			
		Previous period km 10+750		Reporting period km 10+750		Previous period km 14+100		Reporting period Km 14+100	
Quality indicator	**UNIT**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**
Transparency	cm	**31**	**n/a**	31	**n/a**	**5**	**n/a**	3	**n/a**
Suspended solids	mg/l	**13**	**III**	12.5	III	**40.2**	**V**	69.9	**V**
Color:	level	**15**	**III**	10	III	**15**	**III**	20	**III**
Odor (20°C and 60°C)	grade	**0**	**I**	0	I	**1**	**I**	2	**II**
Dissolved oxygen	mgO2/l	**7.16**	**I**	7.26	I	**7.05**	**I**	8.2	**I**
pH		**7.7**		7.7		**7.9**		8.0	
Carbonate Alkalinity	mg/l	**12**	**n/a**	10.5	n/a	**15**	**n/a**	12.0	**n/a**
Sulfate ion	mg/l	**7.769**	**I**	9.872	I	**11.32**	**I**	17.74	**II**
Chloride ion	mg/l	**2.958**	**I**	4.609	I	**5.129**	**I**	9.464	**II**
Fluorides	mg/l	**0.0732**	**n/a**	0.102	**n/a**	**0.0870**	**n/a**	0.0982	**n/a**
Bromide	mg/l	**<0.03**	**n/a**	<0.03	**n/a**	**<0.03**	**n/a**	<0.03	**n/a**
Nitrates	mgN/l	**0.246**	**I**	0.18	I	**0.185**	**I**	0.28	**I**
Phosphate ion	mg/l	**0.0141**	**I**	0.00974	I	**0.0222**	**I**	0.0509	**II**
Biochemical oxygen demand (BOD5)	mgO2/l	**2.27**	**I**	2.23	I	**2.25**	**I**	3.11	**II**
Chemical oxygen demand (COD) -Cr	mgO2/l	**5**	**I**	5	I	**5**	**I**	10	**I**
Electrical conductivity	µS/cm	**133**	**I**	155	I	**210**	**I**	260	**II**
General mineralization	mg/l	**86**	**I**	**101**	I	**137**	**I**	**169**	**II**

At km 10+750, which is located outside the project influence zone and serves as a baseline monitoring point, water quality indicators remained stable between the previous and reporting periods. Transparency and suspended solids did not change, showing consistent natural clarity of the river. Dissolved oxygen remained high and within Class I, confirming steady natural

oxygenation. The pH value stayed neutral, while sulfate, chloride, and fluoride concentrations showed only minor natural variation. Conductivity and general mineralization increased slightly but remained within the same quality class. Overall, this baseline point continues to represent natural, unaffected water conditions.

At km 14+100, located within the project influence area, the reporting period shows a clear physical deterioration. Transparency decreased, and suspended solids stayed in the poorest (Class V) category, reflecting increased turbidity and sediment load. Dissolved oxygen remained within Class I, and pH values were stable and neutral. Concentrations of sulfate and chloride ions increased but stayed within low ranges. Conductivity and mineralization rose noticeably, showing an increased load of dissolved solids.

Comparison of the two points confirms that the physical changes at km 14+100 are directly related to ongoing construction activities. In particular, **riverbed cleaning works launched near km 12+000** caused temporary disturbance and downstream turbidity, which affected this section. Despite these localized impacts, all chemical and oxygen indicators remain within normal limits, and the observed effects are purely physical.

- Km 10+750 – Baseline point outside the project area; natural and stable conditions.
- Km 14+100 – Physical deterioration (turbidity, suspended solids, mineralization) linked to construction and riverbed cleaning near km 12+000.
- Overall – Localized, temporary physical impact; general water quality remains within acceptable ranges.

Water monitoring for upstream and downstream the working site near 16+640

Sampling points

N 3 – 16+600 upstream of 16+640

N4 – 16+740 downstream 16+640

Affected river: Meghri

Table 2. Meghri river water quality parameters for upstream and downstream at site 16+640

		Sampling point N 3				Sampling point N 4			
		Previous period km 16+600		Reporting period Km 16+600		Previous period km 16+700		Reporting period Km 16+740	
Quality indicator	**UNIT**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**
Transparency	cm			**31**	**n/a**			**31**	**n/a**
Suspended solids	mg/l			**5.1**	**I**			**8.2**	**II**
Color:	level			**5**	**III**			**5**	**III**
Odor (20°C and 60°C)	grade			**0**	**I**			**0**	**I**
Dissolved oxygen	mgO2/l			**8.19**	**I**			**8.37**	**I**
pH				**7.9**				**8.0**	
Carbonate Alkalinity	**mg/l**			**12.0**	**n/a**			**10.5**	**n/a**
Sulfate ion	mg/l			**35.18**	**III**			**35.42**	**III**
Chloride ion	mg/l			**7.609**	**I**			**7.654**	**I**
Fluorides	mg/l			**0.158**	**n/a**			**0.0874**	**n/a**
Bromide	mg/l			**<0.03**	**n/a**			**<0.03**	**n/a**
Nitrates	mgN/l			**0.099**	**I**			**0.084**	**I**
Phosphate ion	mg/l			**0.0227**	**I**			**0.0249**	**I**
Biochemical oxygen demand (BOD5)	mgO2/l			**2.76**	**I**			**2.42**	**I**
Chemical oxygen demand (COD) -Cr	mgO2/l			**10**	**I**			**10**	**I**
Electrical conductivity	µS/cm			**294**	**II**			**293**	**II**
General mineralization	**mg/l**			**191**	**II**			**190**	**II**

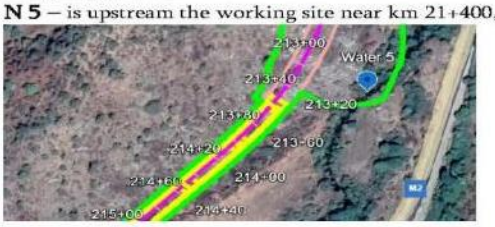
At km 16+600 (Sampling Point 3), water quality during the reporting period is characterized by clear and stable conditions. Transparency was measured at 31 cm, and suspended solids were low (5.1 mg/L, Class I), indicating clean water with minimal particulate load. Dissolved oxygen remained high (8.19 mg/L, Class I), confirming good oxygenation. The pH value of 7.9 is neutral, and both sulfate and chloride ions remained at low levels within Classes III and I, respectively. Electrical conductivity and general mineralization correspond to Class II, reflecting moderate natural mineral content typical for this river stretch. Overall, this point represents clean, well-oxygenated water with no indication of disturbance or external influence. At km 16+740 (Sampling Point 4), similar water quality conditions were recorded. Transparency remained the same (31 cm), though suspended solids slightly increased to 8.2 mg/L (Class II), showing a minor rise in

turbidity but still within acceptable limits. Dissolved oxygen was even higher (8.37 mg/L, Class I), maintaining excellent aeration. The pH stayed neutral (8.0), while sulfate and chloride ion concentrations were nearly identical to those at Point 3, remaining within low levels. Conductivity and mineralization were also close (293 µS/cm and 190 mg/L, both Class II), indicating a similar mineral background.
Comparison between the two points shows that water quality characteristics are almost identical, with only a slight increase in suspended solids at km 16+740. Both locations demonstrate stable chemical and physical indicators, high oxygen content, and no signs of degradation. The results confirm that this river section remains stable, and no construction-related or external influence is observed.

Water monitoring at working section 21+400-21+800

Sampling points

N 5 – is upstream the working site near km 21+400, at km 21+350



N 6 – is downstream the working site near km 21+800, at km 21+850

Affected river: Meghri

Table 3. Meghri river water quality parameters, for 21+350 and 21+850

		Sampling point N 5				Sampling point N 6			
				Reporting period Km 21+350		Previous period km		Reporting period Km 21+850	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm			31	n/a			31	n/a
Suspended solids	mg/l			5.8	I			6.6	I
Color:	level			5	II			5	II
Odor (20°C and 60°C)	grade			0	I			0	I
Dissolved oxygen	mgO2/l			8.84	I			8.79	I
pH				8.2				8.5	
Carbonate Alkalinity	mg/l			15.75	n/a			14.25	n/a

		Sampling point N 5				Sampling point N 6			
				Reporting period Km 21+350		Previous period km		Reporting period Km 21+850	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Sulfate ion	mg/l			22.036	II			21.86	II
Chloride ion	mg/l			9.929	II			9.922	II
Fluorides	mg/l			0.196	n/a			0.135	n/a
Bromide	mg/l			<0.03	n/a			<0.03	n/a
Nitrates	mgN/l			0.043	I			0.023	I
Phosphate ion	mg/l			0.0254	I			0.0222	I
Biochemical oxygen demand (BOD5)	mgO2/l			3.37	II			2.55	I
Chemical oxygen demand (COD) -Cr	mgO2/l			5	I			10	I
Electrical conductivity	µS/cm			293	II			292	II
General mineralization	mg/l			190	II			190	II

At km 21+350 (Sampling Point 5), water quality during the reporting period is characterized by clean and stable conditions. Transparency was 31 cm, and suspended solids were low (5.8 mg/L, Class I), showing clear water with minimal suspended matter. Dissolved oxygen was high (8.84 mg/L, Class I), confirming excellent oxygenation. The pH of 8.2 remained within the neutral–slightly alkaline range. Sulfate and chloride ion concentrations were low (Classes II and II), while electrical conductivity and general mineralization corresponded to Class II, typical for this part of the river. Overall, the point shows good, stable quality with no signs of physical or chemical change.

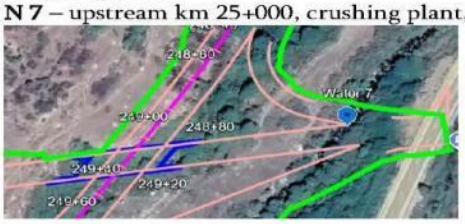
At km 21+850 (Sampling Point 6), very similar results were recorded. Transparency remained unchanged (31 cm), and suspended solids increased slightly to 6.6 mg/L but still fell within Class I. Dissolved oxygen was 8.79 mg/L (Class I), showing sustained high oxygen levels. The pH increased slightly to 8.5 but stayed within normal limits. Sulfate and chloride ions were almost identical to those at Point 5, both remaining within Class II. Conductivity and total mineralization values were stable and comparable (292 µS/cm and 190 mg/L, respectively, Class II).

Comparison of both points indicates very stable conditions along this river stretch. The small increase in suspended solids and pH at km 21+850 reflects only natural variation and not any external impact. Chemical composition, oxygen regime, and mineral content remain consistent, confirming uniform and unaffected water quality throughout this section.

Water monitoring upstream and downstream of the production/camp section

Sampling points

N 7 – upstream km 25+000, crushing plant, at km 24+900



N 8 – downstream km 26+000, after the Camp and Batching Plant, at km 26+100

Affected river: Meghri

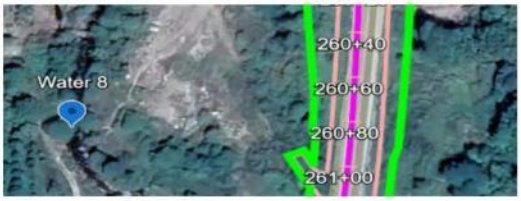


Table 4. Meghri river water quality parameters, for 24+900 and 26+100

		Sampling point N 7				Sampling point N 8			
		Previous period km 24+780		Reporting period Km 24+900		Previous period km 26+100		Reporting period Km 26+100	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm	31	n/a	31	n/a	31	n/a	31	n/a
Suspended solids	mg/l	10.7	III	20.6	IV	12	III	37.8	V
Color:	level	15	III	5	II	15	III	10	III
Odor (20°C and 60°C)	grade	0	I	3	IV	0	I	2	II
Dissolved oxygen	mgO2/l	6.85	II	8.46	I	6.96	II	8.08	I
pH		8.2		8.6		8.1		8.2	
Carbonate Alkalinity	mg/l	14.25	n/a	15.75	n/a	15.75	n/a	15.75	n/a
Sulfate ion	mg/l	35.85	III	32.36	II	34.91	III	34.016	III
Chloride ion	mg/l	7.174	I	8.774	I	6.978	I	8.621	I
Fluorides	mg/l	0.579	n/a	0.140	n/a	0.303	n/a	0.163	n/a
Bromide	mg/l	<0.03	n/a	<0.03	n/a	<0.03	n/a	<0.03	n/a
Nitrates	mgN/l	0.070	I	0.048	I	0.058	I	<0.011	I
Phosphate ion	mg/l	0.00649	I	0.00541	I	0.0179	I	0.00379	I
Biochemical oxygen demand (BOD5)	mgO2/l	1.88	I	3.18	II	2.33	I	3.31	II
Chemical oxygen demand (COD)-Cr	mgO2/l	5	I	10	I	5	I	5	I
Electrical conductivity	µS/cm	311	II	315	II	319	II	324	II
General mineralization	mg/l	202	II	205	II	207	II	211	II

At km 24+900 (Sampling Point 7), water quality during the reporting period shows generally good conditions with moderate physical variation. Transparency remained at 31 cm, while suspended solids increased from 10.7 mg/L (Class III) to 20.6 mg/L (Class IV), indicating a temporary rise in turbidity.

Dissolved oxygen improved from 6.85 mg/L (Class II) to 8.46 mg/L (Class I), showing strong oxygenation and good self-purification capacity. The pH rose slightly to 8.6 but remained within acceptable limits. Sulfate and chloride ions stayed low (Classes II and I, respectively), and conductivity and mineralization values remained stable within Class II. Although this point is located outside the direct influence of the crushing plant, it lies downstream of some other business activities (mining camps, parkings, etc) and may be partially affected by sediment runoff or washout from that zone. The increase in suspended solids and the reduction in color level (from Class III to II) suggest a short-term physical influence, while the overall chemical composition remains stable and favorable.

At km 26+100 (Sampling Point 8), water quality during the reporting period shows a more pronounced physical change. Transparency remained at 31 cm, but suspended solids rose significantly from 12 mg/L (Class III) to 37.8 mg/L (Class V), indicating high turbidity and notable sediment input. Dissolved oxygen increased from 6.96 mg/L (Class II) to 8.08 mg/L (Class I), demonstrating that oxygen conditions remain good despite the higher sediment load. The pH stayed stable (8.1–8.2), and sulfate and chloride ion concentrations changed slightly but remained within the same quality classes (III and I). Conductivity and mineralization values increased marginally but stayed within Class II, confirming stable overall water chemistry.

Comparison of the two points shows a clear downstream pattern of physical disturbance. The rise in suspended solids at both locations reflects localized sedimentation and surface runoff. Despite these temporary impacts, oxygen and chemical indicators remain within safe ranges, confirming that the observed changes are mainly physical and short-term.

- Km 24+900 – Slight physical impact likely related to its proximity to other objects, which may affect water turbidity; otherwise stable water chemistry and strong oxygenation.
- Km 26+100 – Stronger physical deterioration (high turbidity and suspended solids) from downstream disturbance; chemical indicators remain stable.

Water monitoring upstream and downstream construction section at km 32+200 - 32+540

N **9** is upstream km 32+200 located at km 32+170

N **10** is taken downstream km 32+540 at km 32+590

Affected river: Meghri

Table 5. Meghri river water quality parameters for 32+170 and 32+590

		Sampling point N 9				Sampling point N 10			
				Reporting period Km 32+170		Previous period km 32+590		Reporting period Km 32+590	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm			0	n/a	1	n/a	0	n/a
Suspended solids	mg/l			884.2	V	178.2	V	743.4	V
Color:	level			20	III	10	III	20	III
Odor (20°C and 60°C)	grade			0	I	1	I	1	I
Dissolved oxygen	mgO2/l			8.12	I	7.33	I	7.97	I
pH				8.3		7.9		8.1	
Carbonate Alkalinity	mg/l			17.25	n/a	23.25	n/a	17.25	n/a
Sulfate ion	mg/l			36.50	III	48.042	III	40.83	III
Chloride ion	mg/l			10.35	II	8.423	I	10.33	II
Fluorides	mg/l			0.431	n/a	0.364	n/a	0.232	n/a
Bromide	mg/l			<0.03	n/a	<0.03	n/a	<0.03	n/a
Nitrates	mgN/l			0.371	I	0.386	I	0.355	I
Phosphate ion	mg/l			0.0536	II	0.0124	I	0.0444	II
Biochemical oxygen demand (BOD5	mgO2/l			3.06	II	1.06	I	2.91	I
Chemical oxygen demand (COD) -Cr	mgO2/l			10	I	5	I	10	I
Electrical conductivity	µS/cm			404	II	454	II	420	II
General mineralization	mg/l			263	II	295	II	273	II

At km 32+170 (Sampling Point 9), conditions show severe physical disturbance directly linked to sand washing activities at km 29 by Meghri TSHSHD. Transparency was 0 cm and suspended solids reached 884.2 mg/l (Class V). Dissolved oxygen remained in Class I, pH was slightly alkaline, and conductivity/mineralization stayed in Class II, indicating a physical (sediment) effect without chemical deterioration.

At km 32+590 (Sampling Point 10), transparency worsened from 1 cm in the previous period to 0 cm in the reporting period, and suspended solids increased from 178.2 mg/l to 743.4 mg/l (both Class V). Dissolved oxygen stayed in Class I, pH remained near neutral–alkaline, and conductivity/mineralization were Class II, confirming stable chemistry despite very high turbidity.

Overall, both points are impacted by downstream transport from the sand washing at km 29, producing a strong, temporary physical effect (turbidity and suspended solids) while chemical indicators remain stable.

AIR quality monitoring for September, 2025

4 sampling points were selected to monitor the air in Tunnel N2, to continue monitoring of Batching plant activities' impact, air in TU3 and monitor the construction activities on Meghri residential area near km 35.

N 1 – in Tunnel N 2 (16+380), depth around 230 m. Active movement of various machinery were working in the tunnel N2 during sampling (excavator, trucks, others). One of sensors was lost.

N 2 – Near the batching plant (km 25+600)

There are no residential sections near the points.
The Batching Plant was operated during sampling.

N 3 – Inside TU3, but the sensors were lost during shotcreting works.

N 4 - Near the residential area of Meghri, at km 34+500, near Tunnel N3. The tablet was placed on a residential building. Everyday blasting activities are implemented in TU N3. Jumbo driller was operated during the sampling. The internal community road passes in 70-80 m distance.

The sampling was implemented for 7 days (20.09.25-27.09.25) and on 29.09.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 23.10.2025.

Results of monitoring:

N	Name of the Tested Indicator	Measurement unit	Threshold daily average concentration	Air 1 - Km 16+380		Air 2 - Km 25+600		Air 3 – Residential area at km 34+050	
				August 2025	Reporting period	August 2025	Reporting period	August 2025	Reporting period
1.	Sulfur dioxide – SO2	mg/m³	0.05	0.0345	0.0395	0.0479	0.0440	0.0544	0.0113
2.	Nitrogen dioxide – NO2	mg/m³	0.04	0.0389	lost	0.0292	0.0152	0.00586	0.00684

Air Point 1 – km 16+380

Compared with August 2025, SO_2 concentrations increased slightly from 0.0345 to 0.0395 mg/m³, remaining well below the permissible daily average threshold of 0.05 mg/m³. NO_2 data for the reporting period was not recorded; however, based on previous values, it is expected to stay within the limit. Overall, air quality at this point remains satisfactory, with pollutant levels below the standards.

Air Point 2 – km 25+600

At this point, SO_2 decreased slightly from 0.0479 to 0.0440 mg/m³, staying under the threshold. NO_2 concentrations also decreased notably, from 0.0292 to 0.0152 mg/m³, remaining comfortably within permissible limits. The general trend shows an improvement in air quality compared with August 2025, suggesting reduced emissions from machinery and vehicle movement in this area.

Air Point 3 – Residential Area at km 34+500

In the residential zone, SO_2 concentrations dropped sharply from 0.0544 to 0.0113 mg/m³. The high value recorded during August 2025 was not related to project activities but rather to temporary household sources, particularly the seasonal drying of fruits, where sulfur is used for preservation. The current reporting period shows that SO_2 has returned to a very low, safe level. NO_2 slightly increased from 0.00586 to 0.00684 mg/m³ but remains far below the standard.

Summary

- Km 16+380: SO_2 slightly increased but remains below the limit; NO_2 data not recorded but expected to stay compliant.
- Km 25+600: Both SO_2 and NO_2 decreased, showing improved air conditions.
- Km 34+050 (residential): Previous SO_2 exceedance was due to seasonal fruit drying, not construction; current results show full compliance for both indicators.

October 2025

ANNEX 4. WATER AND AIR MONITORING FOR THE SAMPLES, TAKEN ON 25.10.2025

Water monitoring report for samples, taken on 25.10.2025

Meghri River basin water quality parameters (according to the RA Government Decree N 75-N of 27.01. 2011
ON DETERMINING WATER QUALITY ASSURANCE STANDARDS FOR EACH WATERSHED MANAGEMENT AREA DEPENDING ON SITE CHARACTERISTICS.

Quality indicator	QUALITY CLASSIFICATOIN					UNIT
	I	II	III	IV	V	
Dissolved oxygen	>7	>6	>5	>4	<4	mgO2/l
Biochemical oxygen requirements (BOD5)	3	5	9	18	>18	mgO2/l
Chemical oxygen demand (COD) -Cr	10	25	40	80	>80	mgO2/l
Ammonium ion	0.033	0.4	1.2	2.4	>2.4	mgN/l
Nitrite ion	0.009	0.060	0.120	0.300	>0.300	mgN/l
Nitrate ion	0.631	2.500	5.600	11.300	>11.300	mgN/l
Phosphate ion	0.032	0.100	0.200	0.400	>0.400	mg/L
Zinc, general	2.0	100.0	200.0	500.0	>500.0	mcg/l
Copper, general	4.0	24.0	50.0	100.0	>100.0	mcg/l
Chromium, general	1.0	11.0	100.0	250.0	>250.0	mcg/l
Arsenic, general	0.880	20.88	50	100	>100	mcg/L
Cadmium, total	0.036	1.036	2.036	4.036	>4.036	mcg/l
Lead, general	0.18	10.18	25	50	>50	mcg/l
Nickel, total	0.64	10.64	50	100	>100	mcg/l
Molybdenum, total	6	12	24	48	>48	mcg/l
Manganese, general	4	8	16	32	>32	mcg/l
Vanadium. general	1	2	4	8	>8	mcg/L
Cobalt. general	0.121	0.242	0.484	0.968	>0.968	mcg/l
Iron. general	0.071	0.142	0.5	1	>1	mg/l
Calcium	17.0	100	200	300	>300	mg/l
Magnesium	3.5	50	100	200	>200	mg/l
Barium	30	60	120	1000	>1000	mcg/l
Beryllium	0.008	0.016	0.032	100	>100	mcg/l
Potassium	1.5	3.0	6.0	12.0	>12.0	mg/l
Sodium	6.12	12.24	24.48	48.96	>48.96	mg/l
Lithium	7	14	28	56	>56	mcg/l
Boron	80	450	700	1000	>2000	mcg/l
Aluminum	31	62	124	5000	>5000	mcg/l
Selene: general	0.26	20	40	80	>80	mcg/l
Stibium, general	0.44	0.88	1.76	3.52	>3.52	mcg/l
Tin, general	0.07	0.14	0.28	0.56	>0.56	mcg/l
Chemical oxygen demand - Mn	5	10	15	20	>20	ıfqo2 /L
Total inorganic nitrogen	0.85	4	8	16	>16	mgN/l
Total phosphorus	0.03	0.2	0.4	1	>1	mg/l
Chloride ion	9.23	18.46	150	200	> 200	mg/l
Sulfate ion	16.82	33.64	150	250	> 250	mg/l

Quality indicator	QUALITY CLASSIFICATOIN					UNIT
	I	II	III	IV	V	
Silicate ion	5.32	10.64	21.28	42.56	>42.56	mg Si/l
General mineralization	**163**	**326**	**1000**	**1500* *for irrigation 1000**	**>1500**	**mg/l**
Electrical conductivity	237	474	1000	1500* *for irrigation 1000	>1500	mcUhf/cm
Hardness	1.2	10	20	40	<40	mgekv/l
Suspended solids	7.4	8.9	14.8	29.6	>29.6	mg/l
Odor (20°C and 60°C)	<2 (natural)	2 (natural)	2	4	>4	grade
Color:	(natural)	<5 (natural)	20	30	>200	level
PH	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0* *for irrigation 6.5-8.5	<6.5or>9.0	-

In accordance with TPEME's recommendation, provided in the Inception report, the decision was made to exclude heavy metals from the monitoring program and to monitor the following parameters;

OD, COD, pH, colour, odour, TSS, phosphates, carbonates, sulphates, nitrates, chlorides, fluorides, bromides, mineralization, and transparency.

Selection of Sampling Locations – October 2025

10 sampling points were selected by the Contractor's Environmental Officer, and approved by the Engineer's EHS specialist based on the proximity of construction sites to the Tashtun and Meghri Rivers, as well as previous nonconformity reports related to river pollution from construction materials.

- Sampling points 1 and **2** are covering the construction sites located between the kms 10+750 and km 14+100, 2 NCs, which status is ongoing are issued for this section. The point N 1 (10+750) is located out of the Project and will serve as a baseline for Tashtun river samples.
- Sampling point **3 and 4** are upstream and downstream the working site at 16+640, where bridge foundation construction work is going on.
- Sampling point **5 and 6** are upstream and downstream the working section 19+400-21+800, where bridge foundation construction work is going on.
- Sampling point **7 and 8** are upstream and downstream the working section 25+000-26+000, where crushing plant, batching plant and main camp are located.
- Sampling point **9 and 10** are upstream and downstream the working section 32+100-32+500, where excavation work is going on.

Water monitoring for construction section beginning from 10+750 up to 14+100

Sampling points

N 1 – Start point at 10+750 - baseline

N 2 - End point at 14+100

Affected river: Tashtun

The sampling was taken on 25.10.2025 and on 27.10.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 07.11.2025.

The section from 11th to 14th km runs very close to the Tashtun River (part of the Meghri River basin). Starting from August 2024, several non-conformities have been identified by the Engineer, particularly concerning water pollution from dumping materials like soil and stones. For monitoring, Sampling Point N1 was selected as baseline reference not affected by the construction process, located outside of the construction zone.

To assess the impact of construction activities and non-conformities, Sampling Point N2 was taken at the end of the section at 14+100.

The details of monitoring results are on the table below:

Table 1. Tashtun river (Meghri river basin) water quality parameters for km 10+750 and 14+100

		Sampling point N 1				Sampling point N 2			
		Previous period km 10+750		Reporting period km 10+750		Previous period km 14+100		Reporting period Km 14+100	
Quality indicator	**UNIT**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**
Transparency	cm	31	n/a	**31**	**n/a**	3	n/a	**31**	**n/a**
Suspended solids	mg/l	12.5	III	2.1	I	69.9	V	5.7	I
Color:	level	10	III	**10**	**III**	20	III	10	III
Odor (20°C and 60°C)	grade	0	I	**0**	**I**	2	II	0	I
Dissolved oxygen	mgO2/l	7.26	I	8.51	I	8.2	I	8.83	I
pH		7.7	n/a	**7.9**	**n/a**	8.0	n/a	**8.1**	**n/a**
Carbonate Alkalinity	mg/l	10.5	n/a	**12.0**	**n/a**	12.0	n/a	**18.0**	**n/a**
Sulfate ion	mg/l	9.872	I	11.66	I	17.74	II	22.19	II
Chloride ion	mg/l	4.609	I	5.905	I	9.464	II	10.62	II
Fluorides	mg/l	0.102	n/a	0.0724	n/a	0.0982	n/a	0.0792	n/a
Bromide	mg/l	<0.03	n/a	**<0.03**	**n/a**	<0.03	n/a	**<0.03**	**n/a**
Nitrates	mgN/l	0.18	I	0.117	I	0.28	I	0.083	I
Phosphate ion	mg/l	0.00974	I	0.0298	I	0.0509	II	0.0135	I
Biochemical oxygen demand (BOD5)	mgO2/l	2.23	I	**2.53**	**I**	3.11	II	2.48	I
Chemical oxygen demand (COD) -Cr	mgO2/l	5	I	**10**	**I**	10	I	**10**	**I**
Electrical conductivity	µS/cm	155	I	173	I	260	II	277	II
General mineralization	mg/l	101	I	112	I	169	II	180	II

At km 10+750, which serves as the baseline monitoring point located outside the project influence zone, the water quality remained stable compared to the previous period. Transparency values were identical, and suspended solids decreased from Class III to Class I, indicating naturally clear water

conditions. Dissolved oxygen remained high and within Class I in both periods. pH values stayed neutral, and carbonate alkalinity increased slightly but remained within natural variation. Concentrations of sulfate and chloride ions showed minor changes within the same quality classes. Conductivity and general mineralization increased slightly but remained in Class I. All observed changes are small and consistent with natural background variability, confirming that this point continues to represent stable, unaffected river conditions.

At km 14+100, located within the project influence zone, the results show a clear improvement in the reporting period compared with the previous period. Transparency increased significantly, and suspended solids decreased sharply from Class V to Class I, reflecting the settling of previously disturbed sediments. Color, odor, dissolved oxygen, and pH remained stable. Sulfate and chloride ion concentrations increased slightly but stayed within the same quality classes. Conductivity and general mineralization increased but remained within Class II. Overall, the physical parameters show improvement, and the chemical indicators remain within normal ranges.

Comparison of the two monitoring points shows that km 10+750 maintains stable natural characteristics, while km 14+100 demonstrates recovery of physical indicators following prior disturbance. The temporary sediment-related effects previously observed in the project area have significantly decreased during the reporting period.

- Km 10+750 – Stable baseline conditions, no changes beyond natural variability.
- Km 14+100 – Significant improvement in transparency and suspended solids; chemical indicators remain within normal ranges.
- Overall – Water quality in the project influence area shows recovery of physical parameters, and general chemical conditions remain acceptable.

Water monitoring for upstream and downstream the working site near 16+640

Sampling points

N 3 – 16+600 upstream of 16+640

N4 – 16+740 downstream 16+640

Affected river: Meghri

Table 2. Meghri river water quality parameters for upstream and downstream at site 16+640

		Sampling point N 3				Sampling point N 4			
		Previous period km 16+600		Reporting period Km 16+600		Previous period km 16+700		Reporting period Km 16+740	
Quality indicator	**UNIT**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**
Transparency	cm	31	n/a	**31**	**n/a**	31	n/a	**31**	**n/a**
Suspended solids	mg/l	5.1	I	4.7	I	8.2	II	2.7	I
Color:	level	5	II	10	III	5	II	**5**	**II**
Odor (20°C and 60°C)	grade	0	I	**0**	**I**	0	I	**0**	**I**
Dissolved oxygen	mgO2/l	8.19	I	8.64	I	8.37	I	8.84	I
pH		7.9		**8.0**		8.0		**8.0**	
Carbonate Alkalinity	**mg/l**	12.0	n/a	18.0	**n/a**	10.5	n/a	19.5	**n/a**
Sulfate ion	mg/l	35.18	III	41.85	III	35.42	III	42.33	III
Chloride ion	mg/l	7.609	I	9.764	II	7.654	I	9.914	II
Fluorides	mg/l	0.158	n/a	0.122	**n/a**	0.0874	n/a	0.123	**n/a**
Bromide	mg/l	<0.03	n/a	**<0.03**	**n/a**	<0.03	n/a	**<0.03**	**n/a**
Nitrates	mgN/l	0.099	I	0.019	I	0.084	I	0.014	I
Phosphate ion	mg/l	0.0227	I	0.0135	I	0.0249	I	0.0135	I
Biochemical oxygen demand (BOD5)	mgO2/l	2.76	I	2.75	I	2.42	I	3.25	II
Chemical oxygen demand (COD) -Cr	mgO2/l	10	I	15	II	10	I	10	I
Electrical conductivity	µS/cm	294	II	**298**	**II**	293	II	**299**	**II**
General mineralization	**mg/l**	191	II	**194**	**II**	190	II	**194**	**II**

At km 16+600 (Sampling Point 3), water quality remained stable during the reporting period with no indications of disturbance. Transparency stayed unchanged at 31 cm, and suspended solids decreased from 5.1 mg/L to 4.7 mg/L, remaining in Class I and confirming clear water with very low particulate content. Dissolved oxygen increased slightly to 8.64 mg/L, staying within Class I. The pH value remained neutral. Sulfate and chloride ions stayed within their previous ranges, with sulfates in Class III and chlorides shifting from Class I to Class II but still at low levels. Conductivity and general mineralization showed minimal change, staying in Class II, which reflects the stable mineral background of this river section. Overall, this point demonstrates consistent physical and chemical characteristics typical for undisturbed conditions.

At km 16+740 (Sampling Point 4), similar stable water quality conditions were recorded. Transparency

remained at 31 cm in both periods. Suspended solids decreased significantly from 8.2 mg/L (Class II) to 2.7 mg/L (Class I), indicating improvement in physical clarity. Dissolved oxygen increased to 8.84 mg/L, remaining within Class I. The pH value remained fully stable. Sulfate and chloride ion values remained similar to those at Point 3, with chloride shifting from Class I to Class II at low concentrations. Conductivity and general mineralization also remained almost unchanged and within Class II, consistent with natural mineral levels.

Comparison between the two points shows that both monitoring locations demonstrate stable and comparable water quality. The only notable changes are reductions in suspended solids at both sites, indicating improved physical clarity. All chemical indicators remained within their previous classes, and dissolved oxygen stayed high at both points. No signs of external influence or construction-related impact were observed in this section of the river.

- Km 16+600 – Stable conditions with low suspended solids and high dissolved oxygen; no indications of change outside natural variation.
- Km 16+740 – Improved physical clarity and stable chemical indicators; conditions remain consistent with natural background.
- Overall – Both points show stable, well-oxygenated water with minimal particulate load and no signs of disturbance.

Water monitoring at working section 19+500-21+800

Sampling points

N 5 – is upstream the working site near km 19+500, at km 19+450

N 6 – is downstream the working site near km 21+800, at km 21+850

Affected river: Meghri

Table 3. Meghri river water quality parameters, for 19+450 and 21+850

		Sampling point N 5				Sampling point N 6			
				Reporting period Km 19+450		Previous period km		Reporting period Km 21+850	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm			31	n/a	31	n/a	31	n/a
Suspended solids	mg/l			5.4	I	6.6	I	8.3	II
Color:	level			10	III	5	II	15	III
Odor (20°C and 60°C)	grade			0	I	0	I	0	
Dissolved oxygen	mgO2/l			9.06	I	8.79	I	8.73	I
pH				8.3		8.5		8.3	
Carbonate Alkalinity	mg/l			17.25	n/a	14.25	n/a	17.25	n/a
Sulfate ion	mg/l			26.66	II	21.86	II	28.35	II
Chloride ion	mg/l			11.69	II	9.922	II	10.89	II
Fluorides	mg/l			0.122	n/a	0.135	n/a	0.238	n/a
Bromide	mg/l			<0.03	n/a	<0.03	n/a	<0.03	n/a
Nitrates	mgN/l			0.029	I	0.023	I	<0.011	I
Phosphate ion	mg/l			0.0368	I	0.0222	I	0.0206	I
Biochemical oxygen demand (BOD5)	mgO2/l			2.83	II	2.55	I	2.49	I
Chemical oxygen demand (COD) -Cr	mgO2/l			10	I	10	I	15	II
Electrical conductivity	µS/cm			311	II	292	II	311	II
General mineralization	mg/l			202	II	190	II	202	II

At km 19+450 (Sampling Point 5), water quality during the reporting period is characterized by clear and stable conditions. Transparency was 31 cm, and suspended solids were low (5.4 mg/L, Class I), indicating clean water with minimal particulate load. Dissolved oxygen remained high (9.06 mg/L, Class I), confirming good oxygenation. The pH value of 8.3 was within the normal slightly alkaline range. Sulfate and chloride ion concentrations corresponded to Class II, while electrical conductivity and general mineralization also remained within Class II, typical for this stretch of the river. Nutrient indicators such as nitrates and phosphates were low (Class I). Overall, water quality at this point remained clean and stable, with no indication of disturbance during the reporting period.

At km 21+850 (Sampling Point 6), water quality conditions during the reporting period were generally similar. Transparency was 31 cm. Suspended solids were 8.3 mg/L (Class II), showing a moderate but acceptable level of suspended particles. Color was at level 15 (Class III), consistent with natural variation. Dissolved oxygen remained high at 8.73 mg/L (Class I), and the pH of 8.3 stayed within the normal slightly alkaline range. Sulfate and chloride ions corresponded to Class II, while conductivity and mineralization (311 µS/cm and 202 mg/L, Class II) reflected stable mineral content. Nitrate and phosphate ions remained low (Class I), and BOD5 was also within Class I. Overall, water quality at this point remained stable, with no signs of external impact.

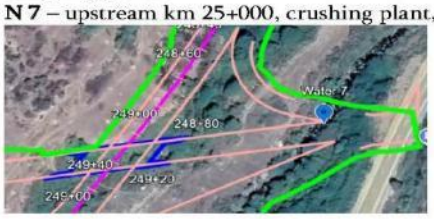
Comparison of both points shows uniform and undisturbed conditions along this river stretch, although some impact is present but not significant and overall, the water quality class remained unchanged (mainly class I and II). Minor differences between the points fall within natural variation, and no changes suggesting

impact were observed.

Water monitoring upstream and downstream of the production/camp section

Sampling points

N 7 – upstream km 25+000, crushing plant, at km 24+900



N 8 – downstream km 26+000, after the Camp and Batching Plant, at km 26+100

Affected river: Meghri

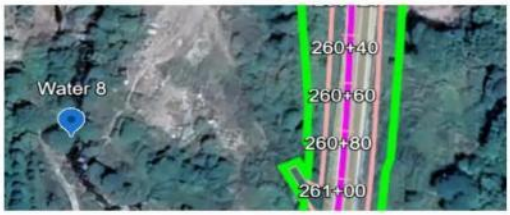


Table 4. Meghri river water quality parameters, for 24+900 and 26+100

		Sampling point N 7				Sampling point N 8			
		Previous period km 24+780		Reporting period Km 24+900		Previous period km 26+100		Reporting period Km 26+100	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm	31	n/a	**31**	**n/a**	31	n/a	**31**	**n/a**
Suspended solids	mg/l	20.6	IV	**20.3**	**IV**	37.8	V	**17.3**	**IV**
Color:	level	5	II	**10**	**III**	10	III	**15**	**III**
Odor (20°C and 60°C)	grade	3	IV	**0**	**I**	2	II	**0**	**I**
Dissolved oxygen	mgO2/l	8.46	I	**8.65**	**I**	8.08	I	**8.41**	**I**
pH		8.6		**8.3**		8.2		**8.2**	
Carbonate Alkalinity	mg/l	15.75	n/a	**17.25**	**n/a**	15.75	n/a	**15.0**	**n/a**
Sulfate ion	mg/l	32.36	II	**44.11**	**III**	34.016	III	**43.69**	**III**
Chloride ion	mg/l	8.774	I	**10.31**	**II**	8.621	I	**9.964**	**II**
Fluorides	mg/l	0.140	n/a	**0.195**	**n/a**	0.163	n/a	**0.371**	**n/a**
Bromide	mg/l	<0.03	n/a	**<0.03**	**n/a**	<0.03	n/a	**<0.03**	**n/a**
Nitrates	mgN/l	0.048	I	**<0.011**	**I**	<0.011	I	**<0.011**	**I**

		Sampling point N 7				Sampling point N 8			
		Previous period km 24+780		Reporting period Km 24+900		Previous period km 26+100		Reporting period Km 26+100	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Phosphate ion	mg/L	0.00541	I	0.0103	I	0.00379	I	0.00541	I
Biochemical oxygen demand (BOD5)	mgO2/l	3.18	II	2.71	I	3.31	II	3.19	II
Chemical oxygen demand (COD)-Cr	mgO2/l	10	I	10	I	5	I	10	I
Electrical conductivity	µS/cm	315	II	350	II	324	II	357	II
General mineralization	mg/l	205	II	228	II	211	II	232	II

At km 24+900 (Sampling Point 7), water quality during the reporting period shows generally good conditions with some moderate physical variation. Transparency remained 31 cm, and suspended solids were within Class IV, indicating a temporary increase in turbidity. Dissolved oxygen was in Class I, reflecting strong oxygenation and stable self-purification capacity. The pH remained within the normal slightly alkaline range. Sulfate and chloride ions were within Classes III and II, and conductivity and mineralization corresponded to Class II, indicating stable chemical conditions. This point is located downstream of several small facilities and activities, which may contribute to short-term sediment input. Overall, the changes observed are physical in nature, while the chemical composition remains stable.

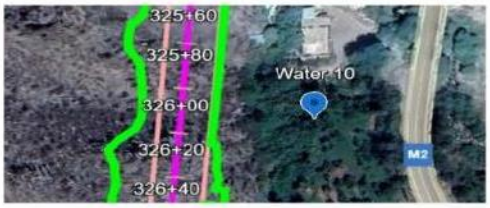
At km 26+100 (Sampling Point 8), water quality shows more pronounced physical influence. Transparency was 31 cm, and suspended solids were within Class IV but higher compared to upstream conditions, indicating notable turbidity and increased sediment input. Despite the elevated suspended matter, dissolved oxygen remained in Class I, confirming stable oxygenation. The pH stayed within normal limits, and sulfate and chloride ions remained within their respective classes (III and II). Conductivity and general mineralization corresponded to Class II, indicating unchanged chemical background. The observed changes at this point are mainly related to physical disturbance rather than any chemical alteration.

Comparison of the two points shows a consistent pattern of short-term physical influence, mainly reflected in suspended solids and color. Chemical and oxygen indicators remained stable across both locations, confirming that the changes are limited to local physical effects without broader impact on water quality.

Water monitoring upstream and downstream construction section at km 32+200 – 32+540

N **9** is upstream km 32+200 located at km 32+170

N **10** is taken downstream km 32+540 at km 32+590



Affected river: Meghri

Table 5. Meghri river water quality parameters for 32+170 and 32+590

		Sampling point N 9				Sampling point N 10			
		Previous period km 32+170		Reporting period Km 32+170		Previous period km 32+590		Reporting period Km 32+590	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm	0	n/a	**0**	**n/a**	0	n/a	**0**	**n/a**
Suspended solids	mg/l	884.2	V	**1054.3**	**V**	743.4	V	**968.1**	**V**
Color:	level	20	III	**20**	**III**	20	III	**20**	**III**
Odor (20°C and 60°C)	grade	0	I	**0**	**I**	1	I	**1**	**I**
Dissolved oxygen	mgO2/l	8.12	I	**8.78**	**I**	7.97	I	**8.69**	**I**
pH		8.3		**8.3**		8.1		**8.2**	
Carbonate Alkalinity	mg/l	17.25	n/a	**20.25**	**n/a**	17.25	n/a	**17.25**	**n/a**
Sulfate ion	mg/l	36.50	III	**45.49**	**III**	40.83	III	**48.99**	**III**
Chloride ion	mg/l	10.35	II	**10.95**	**II**	10.33	II	**10.50**	**II**
Fluorides	mg/l	0.431	n/a	**0.201**	**n/a**	0.232	n/a	**0.301**	**n/a**
Bromide	mg/l	<0.03	n/a	**<0.03**	**n/a**	<0.03	n/a	**<0.03**	**n/a**
Nitrates	mgN/l	0.371	I	**0.303**	**I**	0.355	I	**0.304**	**I**
Phosphate ion	mg/L	0.0536	II	**0.0189**	**I**	0.0444	II	**0.0243**	**I**

		Sampling point N 9				Sampling point N 10			
		Previous period km 32+170		Reporting period Km 32+170		Previous period km 32+590		Reporting period Km 32+590	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Biochemical oxygen demand (BOD5	mgO2/l	3.06	II	2.8	I	2.91	I	2.73	I
Chemical oxygen demand (COD) -Cr	mgO2/l	10	I	15	II	10	I	10	I
Electrical conductivity	µS/cm	404	II	404	II	420	II	427	II
General mineralization	mg/l	263	II	263	II	273	II	278	II

At km 32+170 (Sampling Point 9), water quality during the reporting period is characterized by very strong physical disturbance. Transparency was 0 cm and suspended solids were at Class V, indicating extremely high turbidity and intense sediment load. Color remained at Class III, and no odor was detected. Despite the heavy physical impact, dissolved oxygen stayed in Class I, pH remained slightly alkaline, and conductivity and mineralization were within Class II. These parameters show that the disturbance is strictly physical, with no chemical deterioration.

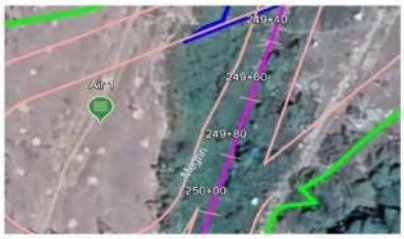
At km 32+590 (Sampling Point 10), similar conditions were recorded. Transparency remained 0 cm, and suspended solids were again within Class V, confirming very high turbidity at this downstream location. Color and odor remained stable, and dissolved oxygen stayed in Class I. The pH was within the normal range, and sulfate, chloride, conductivity, and mineralization remained within their usual quality classes. As at Point 9, the change reflects a physical effect from heavy sediment transport rather than any chemical alteration.

Overall, both points are strongly affected by downstream sediment transport from the sand washing activities by Meghru Chanshin LLC at km 29, resulting in extremely high turbidity and Class V suspended solids, while chemical parameters remain stable and unchanged indicating the ability of water natural sources for self-recovery.

AIR quality monitoring for October, 2025

5 sampling points were selected to continue monitoring the potential impact of batching plant activities, crusher plant operations, air conditions in TU3, construction activities near the Meghri residential area at km 35, and to conduct a control measurement in the deeper section of the residential area in Meghri.

N 1 – Crusher plant at km 25+000, where the small fractions section was operating at the time of measurement.



N 2 – Near the batching plant (km 25+600)

There are no residential sections near the points.
The Batching Plant was operated during sampling.

N 3 – Inside TU3.
Active excavation works were done inside tunnel. Jumbo drill equipment was working, blastings were done. The monitoring tablet was installed at an approximate depth of 150 m from the tunnel entrance.

N 4 - Near the residential area of Meghri, at km 34+500, near Tunnel N3. The tablet was placed on a residential building. Everyday blasting activities are implemented in TU N3. Jumbo driller was operated during the sampling. The internal community road passes in 70-80 m distance.

N 5 - In the residential area of Meghri, at km 34+800. The tablet was placed on a residential building. Everyday blasting activities are implemented in TU N3. Jumbo driller was operated during the sampling. The internal community road passes in 30 m distance.

The sampling was implemented for 7 days (18.10.25-25.10.25) and on 27.10.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 07.11.2025.

Results of monitoring:

N	Name of the Tested Indicator	Measurement unit	Threshold daily average concentration	Air 1 - Km 25+000		Air 2 - Km 25+600		Air 3– TU 3	
				Sept 2025	Reporting period	Sept 2025	Reporting period		Reporting period
1.	Sulfur dioxide – SO2	mg/m³	0.05		0.0400	0.0440	0.0365		0.0328
2.	Nitrogen dioxide – NO2	mg/m³	0.04		0.0219	0.0152	0.0214		0.0199

N	Name of the Tested Indicator	Measurement unit	Threshold daily average concentration	Air 4 – Residential area at km 34+450		Air 5 – Residential area at km 34+800			
				Sept 2025	Reporting period		Reporting period		
3.	Sulfur dioxide – SO2	mg/m³	0.05	0.0113	0.0118		0.00979		
4.	Nitrogen dioxide – NO2	mg/m³	0.04	0.00684	0.0200		0.0121		

Air Point 1 – km 25+000

SO_2 concentrations during the reporting period were below the daily average threshold and reflected stable conditions around the crusher plant area. NO_2 levels were also within permissible limits and showed no indication of elevated emissions. Overall, air quality at this point remained satisfactory, with pollutant concentrations characteristic of normal machinery operation.

Air Point 2 – km 25+600

At this location, SO_2 and NO_2 concentrations were within the established limits. The values recorded indicate stable air conditions around the batching and construction zone, with no exceedances or signs of increased emissions during the reporting period.

Air Point 3 – TU3

Air quality inside the tunnel construction zone remained stable. Both SO_2 and NO_2 concentrations were below the applicable thresholds, showing that construction activities and internal ventilation do not create elevated pollutant levels. Conditions remained compliant throughout the reporting period.

Air Point 4 – Residential Area at km 34+450

SO_2 and NO_2 levels remained low and within permissible limits. The elevated SO_2 that appeared in earlier months was confirmed to be unrelated to construction activities and was caused by seasonal household fruit-drying practices involving sulfur use. These activities have now ended, and current measurements show normal background conditions in the residential area.

Air Point 5 – Residential Area at km 34+800 (Control Point)

This point served as a control measurement to verify the SO_2 situation in the deeper residential section. The recorded values were low and fully within the limits, confirming that the previous SO_2 increase in nearby areas was linked to seasonal fruit-drying rather than to construction works. Air quality at this point remains stable.

Summary

All monitored locations recorded SO_2 and NO_2 concentrations below the daily average thresholds. The earlier increase in SO_2 in the residential area was confirmed to be due to temporary household fruit-drying activities, not construction. With these activities now finished, air quality across all points remains stable and compliant.

November 2025

ANNEX 4. WATER AND AIR MONITORING FOR THE SAMPLES, TAKEN ON 27.11.2025

Water monitoring report for samples, taken on 27.11.2025

Meghri River basin water quality parameters (according to the RA Government Decree N 75-N of 27.01. 2011
ON DETERMINING WATER QUALITY ASSURANCE STANDARDS FOR EACH WATERSHED MANAGEMENT AREA DEPENDING ON SITE CHARACTERISTICS.

Quality indicator	QUALITY CLASSIFICATOIN					UNIT
	I	II	III	IV	V	
Dissolved oxygen	>7	>6	>5	>4	<4	mgO2/l
Biochemical oxygen requirements (BOD5)	3	5	9	18	>18	mgO2/l
Chemical oxygen demand (COD) -Cr	10	25	40	80	>80	mgO2/l
Ammonium ion	0.033	0.4	1.2	2.4	>2.4	mgN/l
Nitrite ion	0.009	0.060	0.120	0.300	>0.300	mgN/l
Nitrate ion	0.631	2.500	5.600	11.300	>11.300	mgN/l
Phosphate ion	0.032	0.100	0.200	0.400	>0.400	mg/l
Zinc, general	2.0	100.0	200.0	500.0	>500.0	mcg/l
Copper, general	4.0	24.0	50.0	100.0	>100.0	mcg/l
Chromium, general	1.0	11.0	100.0	250.0	>250.0	mcg/l
Arsenic, general	0.880	20.88	50	100	>100	mcg/l
Cadmium, total	0.036	1.036	2.036	4.036	>4.036	mcg/l
Lead, general	0.18	10.18	25	50	>50	mcg/l
Nickel, total	0.64	10.64	50	100	>100	mcg/l
Molybdenum, total	6	12	24	48	>48	mcg/l
Manganese, general	4	8	16	32	>32	mcg/l
Vanadium. general	1	2	4	8	>8	mcg/l
Cobalt. general	0.121	0.242	0.484	0.968	>0.968	mcg/l
Iron. general	0.071	0.142	0.5	1	>1	mg/l
Calcium	17.0	100	200	300	>300	mg/l
Magnesium	3.5	50	100	200	>200	mg/l
Barium	30	60	120	1000	>1000	mcg/l
Beryllium	0.008	0.016	0.032	100	>100	mcg/l
Potassium	1.5	3.0	6.0	12.0	>12.0	mg/l
Sodium	6.12	12.24	24.48	48.96	>48.96	mg/l
Lithium	7	14	28	56	>56	mcg/l
Boron	80	450	700	1000	>2000	mcg/l
Aluminum	31	62	124	5000	>5000	mcg/l
Selene: general	0.26	20	40	80	>80	mcg/l
Stibium, general	0.44	0.88	1.76	3.52	>3.52	mcg/l
Tin, general	0.07	0.14	0.28	0.56	>0.56	mcg/l
Chemical oxygen demand - Mn	5	10	15	20	>20	ufqo2 /l
Total inorganic nitrogen	0.85	4	8	16	>16	mgN/l
Total phosphorus	0.03	0.2	0.4	1	>1	mg/l
Chloride ion	9.23	18.46	150	200	> 200	mg/l
Sulfate ion	16.82	33.64	150	250	> 250	mg/l

Quality indicator	QUALITY CLASSIFICATOIN					UNIT
	I	II	III	IV	V	
Silicate ion	5.32	10.64	21.28	42.56	>42.56	mg Si/l
General mineralization	**163**	**326**	**1000**	**1500* *for irrigation 1000**	**>1500**	**mg/l**
Electrical conductivity	237	474	1000	1500* *for irrigation 1000	>1500	mcUḥ/cm
Hardness	1.2	10	20	40	<40	mgekv/l
Suspended solids	7.4	8.9	14.8	29.6	>29.6	mg/l
Odor (20°C and 60°C)	<2 (natural)	2 (natural)	2	4	>4	grade
Color:	(natural)	<5 (natural)	20	30	>200	level
PH	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0* *for irrigation 6.5-8.5	**<6.5or>9.0**	-

In accordance with TPEME's recommendation, provided in the Inception report, the decision was made to exclude heavy metals from the monitoring program and to monitor the following parameters;

OD, COD, pH, colour, odour, TSS, phosphates, carbonates, sulphates, nitrates, chlorides, fluorides, bromides, mineralization, and transparency.

Selection of Sampling Locations – November 2025

10 sampling points were selected by the Contractor's Environmental Officer, and approved by the Engineer's EHS specialist based on the proximity of construction sites to the Tashtun and Meghri Rivers, as well as previous nonconformity reports related to river pollution from construction materials.

- Sampling points 1 and **2** are covering the construction sites located between the kms 10+750 and km 14+100, 2 NCs, which status is ongoing are issued for this section. The point N 1 (10+750) is located out of the Project and will serve as a baseline for Tashtun river samples.
- Sampling point **3 and 4** are upstream and downstream the working site at 16+640, where bridge foundation construction work is going on.
- Sampling point **5 and 6** are upstream and downstream the working section 19+400-21+800, where bridge foundation construction work is going on.
- Sampling point **7 and 8** are upstream and downstream the working section 25+000-26+000, where crushing plant, batching plant and main camp are located.
- Sampling point **9 and 10** are upstream and downstream the working section 32+100-32+500, where excavation work is going on.

Water monitoring for construction section beginning from 10+750 up to 14+100

Sampling points

N 1 – Start point at 10+750 - baseline

N 2 - End point at 14+100

Affected river: Tashtun

The sampling was taken on 27.11.2025 and on 28.11.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 18.12.2025.

The section from 11th to 14th km runs very close to the Tashtun River (part of the Meghri River basin). Starting from August 2024, several non-conformities have been identified by the Engineer, particularly concerning water pollution from dumping materials like soil and stones. For monitoring, Sampling Point N1 was selected as baseline reference not affected by the construction process, located outside of the construction zone.

To assess the impact of construction activities and non-conformities, Sampling Point N2 was taken at the end of the section at 14+100.

The details of monitoring results are on the table below:

Table 1. Tashtun river (Meghri river basin) water quality parameters for km 10+750 and 14+100

		Sampling point N 1				Sampling point N 2			
		Previous period km 10+750		Reporting period km 10+750		Previous period km 14+100		Reporting period Km 14+100	
Quality indicator	**UNIT**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**
Transparency	cm	31	n/a	**31**	**n/a**	31	n/a	**31**	**n/a**
Suspended solids	mg/l	2.1	I	**17.7**	**IV**	5.7	I	**4.4**	**I**
Color:	level	10	III	**10**	**III**	10	III	**5**	**II**
Odor (20°C and 60°C)	grade	0	I	**0**	**I**	0	I	**0**	**I**
Dissolved oxygen	mgO2/l	8.51	I	**8.4**	**I**	8.83	I	**8.41**	**I**
pH		7.9	n/a	**7.55**	**n/a**	8.1	n/a	**8.24**	**n/a**
Carbonate Alkalinity	mg/l	12.0	n/a	**10.5**	**n/a**	18.0	n/a	**14.25**	**n/a**
Sulfate ion	mg/l	11.66	I	**12.69**	**I**	22.19	II	**25.92**	**II**
Chloride ion	mg/l	5.905	I	**7.37**	**I**	10.62	II	**12.87**	**II**
Fluorides	mg/l	0.0724	n/a	**0.094**	**n/a**	0.0792	n/a	**0.174**	**n/a**
Bromide	mg/l	<0.03	n/a	**0.072**	**n/a**	<0.03	n/a	**0.133**	**n/a**
Nitrates	mgN/l	0.117	I	**0.247**	**I**	0.083	I	**0.167**	**I**
Phosphate ion	mg/l	0.0298	I	**0.0135**	**I**	0.0135	I	**0.0130**	**I**
Biochemical oxygen demand (BOD5)	mgO2/l	2.53	I	**2.65**	**I**	2.48	I	**1.34**	**I**
Chemical oxygen demand (COD) -Cr	mgO2/l	10	I	**5**	**I**	10	I	**5**	**I**
Electrical conductivity	µS/cm	173	I	**195**	**I**	277	II	**308**	**II**
General mineralization	mg/l	112	I	**127**	**I**	180	II	**200**	**II**

At km 10+750, which serves as the baseline monitoring point located outside the project influence zone, water quality generally remained stable during the reporting period. Transparency values were unchanged compared to the previous period. Suspended solids increased from Class I to Class IV;

however, the remaining physical and chemical parameters showed no corresponding deterioration. Dissolved oxygen slightly decreased but remained within Class I, indicating well-oxygenated conditions. pH values stayed within the neutral range. Carbonate alkalinity decreased slightly, remaining within natural background limits. Concentrations of sulfate and chloride ions showed minor increases but continued to correspond to Class I. Nitrate-nitrogen and phosphate concentrations remained low and within Class I. Electrical conductivity and general mineralization increased slightly but remained within Class I. Overall, the results confirm that km 10+750 continues to represent baseline river conditions, with observed changes attributable to natural background variability.

At km 14+100, located within the project influence zone, the reporting period results indicate improvement of several physical parameters compared to the previous period. Transparency remained unchanged, while suspended solids decreased from Class V to Class I, indicating a substantial reduction of previously elevated sediment levels. Color improved from Class III to Class II. Odor, dissolved oxygen, and pH values remained stable and within acceptable ranges. Sulfate and chloride ion concentrations increased slightly but remained within Class II. Nitrate-nitrogen and phosphate concentrations continued to fall within Class I. Electrical conductivity and general mineralization increased but remained within Class II. These results indicate stabilization of water quality conditions and recovery of physical indicators following earlier disturbance.

Comparison of the two monitoring points shows that km 10+750 maintains stable baseline characteristics representative of natural river conditions, while km 14+100 demonstrates improvement of physical parameters within the project influence zone. Chemical indicators at both locations remain within acceptable ranges and show no evidence of sustained adverse change.

- Km 10+750 – Baseline conditions maintained, with variations consistent with natural background variability.
- Km 14+100 – Significant improvement in suspended solids and color; chemical parameters remain stable.
- Overall – Water quality conditions are satisfactory, with recovery of physical parameters observed in the project influence area and no indication of persistent negative effects.

Water monitoring for upstream and downstream the working site near 16+640

Sampling points

N 3 – 16+600 upstream of 16+640

N4 – 16+740 downstream 16+640

Affected river: Meghri

Table 2. Meghri river water quality parameters for upstream and downstream at site 16+640

		Sampling point N 3				Sampling point N 4			
		Previous period km 16+600		Reporting period Km 16+600		Previous period km 16+700		Reporting period Km 16+740	
Quality indicator	**UNIT**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**	**Index**	**Quality**
Transparency	cm	31	n/a	**31**	**n/a**	31	n/a	**31**	**n/a**
Suspended solids	mg/l	4.7	I	3.2	I	2.7	I	2.9	I
Color:	level	10	III	5	II	5	II	**5**	**II**
Odor (20°C and 60°C)	grade	0	I	**0**	**I**	0	I	**0**	**I**
Dissolved oxygen	mgO2/l	8.64	I	8.7	I	8.84	I	8.69	I
pH		8.0		7.91		8.0		7.67	
Carbonate Alkalinity	mg/l	18.0	n/a	15	n/a	19.5	n/a	12	n/a
Sulfate ion	mg/l	41.85	III	45.60	III	42.33	III	46.04	III
Chloride ion	mg/l	9.764	II	9.44	II	9.914	II	9.55	II
Fluorides	mg/l	0.122	n/a	0.182	n/a	0.123	n/a	0.161	n/a
Bromide	mg/l	<0.03	n/a	**<0.03**	**n/a**	<0.03	n/a	0.130	n/a
Nitrates	mgN/l	0.019	I	0.235	I	0.014	I	0.231	I
Phosphate ion	mg/l	0.0135	I	0.0088	I	0.0135	I	0.0078	I
Biochemical oxygen demand (BOD5)	mgO2/l	2.75	I	2.54	I	3.25	II	1.39	I
Chemical oxygen demand (COD) -Cr	mgO2/l	15	II	10	I	10	I	5	I
Electrical conductivity	µS/cm	298	II	313	II	299	II	316	II
General mineralization	**mg/l**	194	II	203	II	194	II	205	II

At km 16+600 (Sampling Point N3), water quality during the reporting period remained within the same quality classes as in the previous period, with only minor variations in individual parameters. Transparency remained unchanged at 31 cm. Suspended solids decreased and remained within Class I, indicating low particulate content. Color improved from Class III to Class II. Dissolved oxygen increased slightly and remained within Class I. pH values remained within the neutral range. Carbonate alkalinity decreased slightly, remaining within natural background levels. Sulfate ion concentrations increased but remained within Class III. Chloride ion concentrations showed minor variation and remained within Class II. Nitrate-nitrogen and phosphate concentrations remained within Class I. Biochemical oxygen demand decreased slightly and remained within Class I, while chemical oxygen demand improved from Class II to Class I.

Electrical conductivity and general mineralization increased slightly but remained within Class II.

At km 16+740 (Sampling Point N4), water quality during the reporting period remained within the same quality classes as in the previous period, with only minor variations in individual parameters. Transparency remained unchanged at 31 cm. Suspended solids remained low and within Class I. Color remained within Class II. Dissolved oxygen remained high and within Class I. pH values remained stable within the neutral range. Carbonate alkalinity decreased but remained within natural background levels. Sulfate ion concentrations increased slightly and remained within Class III. Chloride ion concentrations showed minor variation and remained within Class II. Nitrate-nitrogen and phosphate concentrations remained within Class I. Biochemical oxygen demand improved from Class II to Class I, and chemical oxygen demand remained within Class I. Electrical conductivity and general mineralization increased slightly but continued to correspond to Class II.

Comparison of the two monitoring points shows that both upstream and downstream locations remain within the same water quality classes during the reporting period. Physical parameters indicate low suspended solids and stable transparency at both points. Chemical indicators remain within established quality classes, and dissolved oxygen levels remain consistently high.

Km 16+600 – Water quality remains within the same classes as the previous period, with minor parameter variations.
Km 16+740 – Water quality remains within the same classes, with improvement in suspended solids and organic indicators.
Overall – Upstream and downstream water quality remains stable in terms of classification, with no class deterioration observed

Water monitoring at working section 19+500-21+800

Sampling points

N 5 – is upstream the working site near km 19+500, at km 19+450

N 6 – is downstream the working site near km 21+800, at km 21+850

Affected river: Meghri

Table 3. Meghri river water quality parameters, for 19+450 and 21+850

		Sampling point N 5				Sampling point N 6			
		Previous period Km 19+450		Reporting period Km 19+450		Previous period km 21+850		Reporting period Km 21+850	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm	31	n/a	31	n/a	31	n/a	31	n/a
Suspended solids	mg/l	5.4	I	2.9	I	8.3	II	2.7	II
Color:	level	10	III	5	I	15	III	5	I
Odor (20°C and 60°C)	grade	0	I	0	I	0	I	0	I
Dissolved oxygen	mgO2/l	9.06	I	8.51	I	8.73	I	8.43	I
pH		8.3		8.29		8.3		8.25	
Carbonate Alkalinity	mg/l	17.25	n/a	14.25	n/a	17.25	n/a	14.25	n/a
Sulfate ion	mg/l	26.66	II	36.35	III	28.35	II	32.51	II
Chloride ion	mg/l	11.69	II	13.51	II	10.89	II	11.45	II
Fluorides	mg/l	0.122	n/a	0.193	n/a	0.238	n/a	0.181	n/a
Bromide	mg/l	<0.03	n/a	0.135	n/a	<0.03	n/a	0.132	n/a
Nitrates	mgN/l	0.029	I	<0.011	I	<0.011	I	<0.011	I
Phosphate ion	mg/l	0.0368	I	0.0203	I	0.0206	I	0.0099	I
Biochemical oxygen demand (BOD5)	mgO2/l	2.83	II	2.08	II	2.49	I	2.41	I
Chemical oxygen demand (COD) -Cr	mgO2/l	10	I	5	I	15	II	5	I
Electrical conductivity	µS/cm	311	II	350	II	311	II	324	II
General mineralization	mg/l	202	II	228	II	202	II	211	II

At km 19+450 (Sampling Point N5), water quality during the reporting period remained within the same quality classes as in the previous period, with only minor variations in individual parameters. Transparency remained unchanged at 31 cm. Suspended solids decreased and remained within Class I, indicating low particulate content. Color improved from Class III to Class I. Dissolved oxygen slightly decreased but remained within Class I, confirming good oxygenation conditions. pH values remained within the slightly alkaline range. Carbonate alkalinity decreased slightly and remained within natural background levels. Sulfate ion concentration increased and shifted from Class II to Class III, while chloride ion concentration increased slightly and remained within Class II. Nitrate-nitrogen and phosphate concentrations remained low and within Class I. Biochemical oxygen demand remained within Class II, and chemical oxygen demand improved and remained within Class I. Electrical conductivity and general mineralization increased slightly and remained within Class II.

At km 21+850 (Sampling Point N6), water quality during the reporting period remained within the same quality classes as in the previous period, with only minor variations in individual parameters. Transparency remained unchanged at 31 cm. Suspended solids decreased from Class II to Class I, indicating improved physical clarity. Color improved from Class III to Class I. Dissolved oxygen slightly decreased but remained within Class I. pH values remained stable within the slightly alkaline range. Carbonate alkalinity decreased and remained within natural background limits. Sulfate ion concentration increased slightly but remained within Class II, while chloride ion concentration showed minor variation and remained within Class II.

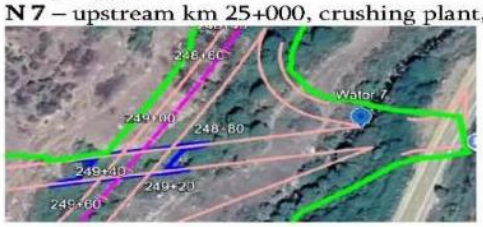
Nitrate-nitrogen and phosphate concentrations remained within Class I. Biochemical oxygen demand remained within Class I, and chemical oxygen demand remained within Class I. Electrical conductivity and general mineralization increased slightly and remained within Class II.

Comparison of the two monitoring points shows that both locations remain within the same water quality classes during the reporting period. Physical parameters indicate low suspended solids and stable transparency, while chemical indicators remain within established quality classes.

Km 19+450 – Water quality remains within the same classes as the previous period, with minor variations in individual parameters.
Km 21+850 – Water quality remains within the same classes, with improvement in physical parameters.
Overall – Water quality along this river stretch remains within Classes I–II, with no deterioration of water quality classes observed..

Water monitoring upstream and downstream of the production/camp section

Sampling points
N 7 – upstream km 25+000, crushing plant, at km 24+900



N 8 – downstream km 26+000, after the Camp and Batching Plant, at km 26+100

Affected river: Meghri

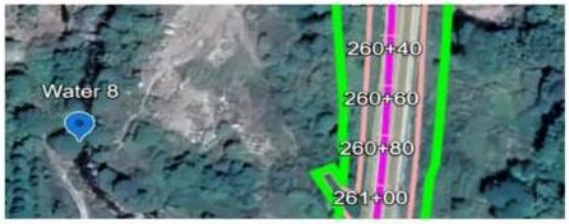


Table 4. Meghri river water quality parameters, for 24+900 and 26+100

		Sampling point N 7				Sampling point N 8			
		Previous period km 24+780		Reporting period Km 24+900		Previous period km 26+100		Reporting period Km 26+100	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm	31	n/a	31	n/a	31	n/a	15	n/a
Suspended solids	mg/l	20.3	IV	3.6	I	17.3	IV	28.1	IV

		Sampling point N 7				Sampling point N 8			
		Previous period km 24+780		Reporting period Km 24+900		Previous period km 26+100		Reporting period Km 26+100	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Color:	level	10	III	5	II	15	III	10	III
Odor (20°C and 60°C)	grade	0	I	0	I	0	I	0	I
Dissolved oxygen	mgO2/l	8.65	I	7.2	I	8.41	I	6.7	II
pH		8.3		8.15		8.2		7.38	
Carbonate Alkalinity	mg/l	17.25	n/a	14.25	n/a	15.0	n/a	15.75	n/a
Sulfate ion	mg/l	44.11	III	42.66	III	43.69	III	43.35	III
Chloride ion	mg/l	10.31	II	11.32	II	9.964	II	11.002	II
Fluorides	mg/l	0.195	n/a	0.192	n/a	0.371	n/a	0.206	n/a
Bromide	mg/l	<0.03	n/a	0.132	n/a	<0.03	n/a	0.133	n/a
Nitrates	mgN/l	<0.011	I	0.110	I	<0.011	I	0.111	I
Phosphate ion	mg/l	0.0103	I	0.0125	I	0.00541	I	0.0156	I
Biochemical oxygen demand (BOD5)	mgO2/l	2.71	I	1.23	I	3.19	II	1.06	I
Chemical oxygen demand (COD)-Cr	mgO2/l	10	I	5	I	10	I	5	I
Electrical conductivity	µS/cm	350	II	350	II	357	II	358	II
General mineralization	mg/l	228	II	228	II	232	II	233	II

At km 24+900 (Sampling Point N7), water quality during the reporting period remained within the same quality classes as in the previous period, with only minor variations in individual parameters. Color improved from Class III to Class II. Odor remained absent. Dissolved oxygen decreased from 8.65 mgO_2/L to 7.72 mgO_2/L but remained within Class I, indicating adequate oxygenation. pH values remained within the slightly alkaline range. Carbonate alkalinity decreased slightly and remained within natural background levels. Sulfate ion concentration increased and remained within Class III, while chloride ion concentration showed a minor increase and remained within Class II. Nitrate-nitrogen concentration increased but remained within Class I. Phosphate concentration increased slightly but remained within Class I. Biochemical oxygen demand decreased and remained within Class I, and chemical oxygen demand remained within Class I. Electrical conductivity and general mineralization remained unchanged and within Class II.

At km 26+100 (Sampling Point N8), water quality during the reporting period remained within the same quality classes as in the previous period, with only minor variations in individual parameters. Color deteriorated from Class III to Class IV. Odor remained absent. Dissolved oxygen decreased from 8.41 mgO_2/L to 6.7 mgO_2/L and shifted from Class I to Class II. pH decreased slightly but remained within natural limits. Carbonate alkalinity increased and remained within natural background variation. Sulfate ion concentration increased slightly and remained within Class III, while chloride ion concentration increased and remained within Class II. Nitrate-nitrogen concentration increased slightly but remained within Class I. Phosphate concentration increased and remained within Class I. Biochemical oxygen

demand decreased and remained within Class I, and chemical oxygen demand remained within Class I. Electrical conductivity and general mineralization increased slightly but remained within Class II.

Comparison of the two monitoring points shows that both locations remain within comparable water quality classes during the reporting period. Variations are mainly reflected in color and dissolved oxygen, while chemical indicators remain within established classes.

Overall summary:
Km 24+900 – Water quality remains within the same classes as the previous period, with minor variations in individual parameters.
Km 26+100 – Water quality remains within the same classes, with localized variation in color and dissolved oxygen.
Overall – Water quality along this river section remains within Classes I–II for most parameters, with no widespread deterioration of chemical water quality classes observed.

Water monitoring upstream and downstream construction section at km 32+200 - 32+540

N **9** is upstream km 32+200 located at km 32+170

N **10** is taken downstream km 32+540 at km 32+590

Affected river: Meghri

Table 5. Meghri river water quality parameters for 32+170 and 32+590

		Sampling point N 9				Sampling point N 10			
		Previous period km 32+170		Reporting period Km 32+170		Previous period km 32+590		Reporting period Km 32+590	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Transparency	cm	0	n/a	11	n/a	0	n/a	10	n/a

		Sampling point N 9				Sampling point N 10			
		Previous period km 32+170		Reporting period Km 32+170		Previous period km 32+590		Reporting period Km 32+590	
Quality indicator	UNIT	Index	Quality	Index	Quality	Index	Quality	Index	Quality
Suspended solids	mg/l	1054.3	V	57.5	V	968.1	V	102.6	V
Color:	level	20	III	10	III	20	III	10	III
Odor (20°C and 60°C)	grade	0	I	0	I	1	I	0	I
Dissolved oxygen	mgO2/l	8.78	I	7.37	I	8.69	I	7.02	I
pH		8.3		8.15		8.2		7.90	
Carbonate Alkalinity	mg/l	20.25	n/a	18.75	n/a	17.25	n/a	18.75	n/a
Sulfate ion	mg/l	45.49	III	49.13	III	48.99	III	60.96	III
Chloride ion	mg/l	10.95	II	11.49	II	10.50	II	11.15	II
Fluorides	mg/l	0.201	n/a	0.241	n/a	0.301	n/a	0.230	n/a
Bromide	mg/l	<0.03	n/a	0.154	n/a	<0.03	n/a	0.152	n/a
Nitrates	mgN/l	0.303	I	0.250	I	0.304	I	0.242	I
Phosphate ion	mg/L	0.0189	I	0.0307	I	0.0243	I	0.0270	I
Biochemical oxygen demand (BOD5	mgO2/l	2.8	I	1.63	I	2.73	I	1.56	I
Chemical oxygen demand (COD) -Cr	mgO2/l	15	II	5	I	10	I	10	I
Electrical conductivity	µS/cm	404	II	424	II	427	II	470	II
General mineralization	mg/l	263	II	276	II	278	II	306	II

At km 32+170 (Sampling Point N9), water quality during the reporting period remained within the same quality classes as in the previous period, with changes observed mainly in physical parameters. Transparency increased compared to the previous period. Suspended solids decreased substantially but continued to correspond to Class V. Color remained within Class III, and no odor was detected. Dissolved oxygen remained within Class I. pH values stayed within the slightly alkaline range. Carbonate alkalinity showed minor variation within natural background conditions. Sulfate ion concentrations remained within Class III, while chloride ion concentrations remained within Class II. Nutrient indicators remained within Class I. Organic pollution indicators remained within Class I. Electrical conductivity and general mineralization remained within Class II.

At km 32+590 (Sampling Point N10), water quality during the reporting period also remained within the same quality classes as in the previous period; however, physical conditions were less favorable compared to Sampling Point N9. Transparency increased compared to the previous period but remained lower in relative terms. Suspended solids remained within Class V and showed a higher level of physical disturbance compared to the upstream point. Color remained within Class III, and no odor was detected. Dissolved oxygen remained within Class I but was lower than at Sampling Point N9. pH values remained within the normal range. Sulfate and chloride ion concentrations remained within Classes III and II, respectively.

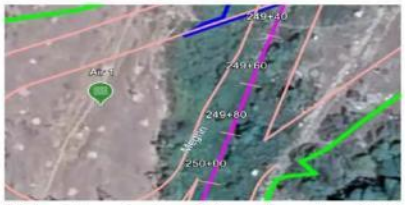
Nutrient indicators and organic pollution indicators remained within Class I. Electrical conductivity and general mineralization remained within Class II.
Comparison of the two monitoring points shows that both locations continue to be affected by elevated suspended solids corresponding to Class V; however, Sampling Point N10 demonstrates more pronounced physical disturbance than Sampling Point N9. Chemical and oxygen-related parameters remain stable and comparable at both points.
Overall summary:
Km 32+170 – Physical conditions show improvement, although suspended solids remain Class V; chemical indicators remain stable.
Km 32+590 – Physical disturbance is more pronounced than upstream, with suspended solids remaining Class V; chemical indicators remain stable.
Overall – This river section remains dominated by physical sediment-related impacts, with downstream conditions at km 32+590 being worse than at km 32+170, while chemical water quality classes remain unchanged.

AIR quality monitoring for November, 2025

4 sampling points were selected to continue monitoring air conditions in TU2, the potential impact of batching plant activities, crusher plant operations, construction activities near the Meghri residential area at km 34+500.

N 1 – Inside TU2.
Active concreting works were done inside tunnel. The monitoring tablet was installed at an approximate depth of 250 m from the tunnel entrance.

N 2 – Crusher plant at km 25+000, where the small fractions section was operating at the time of measurement.



N 3 – Near the batching plant (km 25+600)

There are no residential sections near the points.
The Batching Plant was operated during sampling.

N 4 - Near the residential area of Meghri, at km 34+500, near Tunnel N3. The tablet was placed on a residential building. Everyday blasting activities are implemented in TU N3. Jumbo driller was operated during the sampling. The internal community road passes in 70-80 m distance.

The sampling was implemented for 7 days (20.11.25-27.11.25) and on 28.11.2025 the samples were handed over to the Hydromet Laboratory. The results were provided by Lab electronically on 18.12.2025.

Results of monitoring:

N	Name of the Tested Indicator	Measurement unit	Threshold daily average concentration	Air 1 – TU2		Air 2- Km 25+000		Air 3 - Km 25+600	
					Reporting period	Oct 2025	Reporting period	Oct 2025	Reporting period
1.	Sulfur dioxide – SO2	mg/m³	0.05		0.0355	0.0400	0.0373	0.0365	0.0133
2.	Nitrogen dioxide – NO2	mg/m³	0.04		0.0107	0.0219	0.0428	0.0214	0.0402

N	Name of the Tested Indicator	Measurement unit	Threshold daily average concentration	Air 4 – Residential area at km 34+450					
				Oct 2025	Reporting period				
3.	Sulfur dioxide – SO2	mg/m³	0.05	0.0118	0.0032				
4.	Nitrogen dioxide – NO2	mg/m³	0.04	0.0200	0.0092				

Air Point 1 – TU2

During the reporting period, sulfur dioxide (SO_2) concentrations remained below the daily average threshold. Nitrogen dioxide (NO_2) concentrations were also below the threshold. Air quality at this point remained compliant, with no exceedances recorded.

Air Point 2 – km 25+000

During the reporting period, sulfur dioxide (SO_2) concentrations remained below the daily average threshold. Nitrogen dioxide (NO_2) concentrations slightly exceeded the daily average threshold, indicating a temporary increase at this location. The exceedance was limited to NO_2 only, while SO_2 remained compliant. It should be noted that the monitoring sensor at this point was installed in close proximity to an area with active movement of the trucks moving the crushed materials, which may have influenced the recorded NO_2 levels. For subsequent monitoring periods, it is recommended to relocate the sensor to a position less directly affected by intensive vehicle traffic to obtain more representative ambient air quality data.

Air Point 3 – km 25+600

SO_2 concentrations remained below the daily average threshold during the reporting period. NO_2 concentrations slightly exceeded the daily average threshold, similar to Air Point 2, indicating elevated nitrogen dioxide levels during the reporting period. Other monitored parameters remained within permissible limits.

Air Point 4 – Residential area at km 34+450

At the residential monitoring point, both SO_2 and NO_2 concentrations during the reporting period remained below the applicable daily average thresholds. Compared to the previous period, concentrations decreased, indicating improvement and stable background air quality conditions in the residential area.

Summary

During the reporting period, sulfur dioxide (SO_2) concentrations remained below the daily average thresholds at all monitoring locations. Exceedances were recorded only for nitrogen dioxide (NO_2) at two monitoring points located within active construction areas (km 25+000 and km 25+600). At Air Point 2 (km 25+000), the recorded NO_2 exceedance is considered to be influenced by the location of the monitoring sensor in close proximity to an area with intensive movement of construction trucks. No exceedances were observed at the tunnel monitoring point or within residential areas. Overall, air quality at residential receptors remained compliant, while localized NO_2 exceedances near construction zones are associated with traffic-related emissions and monitoring point positioning.

Annex 3 -Letter from the Ministry of Education, Science, Culture and Sports (Ref. N 01/14.2/24251-2025) regarding the protection of Norashenik Complex.

Annex 2. Letter from MESCS regarding Norashenik chapel and adjacent area.

ՀԱՅԱՍՏԱՆԻ
ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ
ԿՐԹՈՒԹՅԱՆ, ԳԻՏՈՒԹՅԱՆ,
ՄՇԱԿՈՒՅԹԻ ԵՎ ՍՊՈՐՏԻ
ՆԱԽԱՐԱՐՈՒԹՅՈՒՆ

ՆԱԽԱՐԱՐ

РЕСПУБЛИКА АРМЕНИЯ
МИНИСТЕРСТВО ОБРАЗОВАНИЯ,
НАУКИ, КУЛЬТУРЫ И СПОРТА
МИНИСТР

REPUBLIC OF ARMENIA
MINISTRY OF EDUCATION, SCIENCE,
CULTURE AND SPORT
MINISTER

0010, Երևան, Վ. Սարգսյան 3, Կառավարական տուն 2, Հեռ./Tel.: +374 10 59 96 00, ֆաքս/факс/fax (374 10) 52 73 43,
0010, Ереван, В. Саргсян 3, Дом правительства 2, 0010, V. Sargsyan 3, Government House 2, Yerevan, minister@escs.am, www.escs.am

N 01/14.2/24251-2025

ՀՀ ՏԱՐԱԾՔԱՅԻՆ ԿԱՌԱՎԱՐՄԱՆ ԵՎ
ԵՆԹԱԿԱՌՈՒՑՎԱԾՔՆԵՐԻ ՆԱԽԱՐԱՐ
ԴԱՎԻԹ ԽՈՒԴԱԹՅԱՆԻՆ

Ի պատասխան 18.07.2025թ. Ձեր
հմ. ԴԽ/34/24610-2025 գրության

Հարգելի՛ պարոն Խուդաթյան

Հյուսիս-հարավ ճանապարհային միջանցքի ներդրումային ծրագրի Տրանշ 4-ի. Քաջարան–Ագարակ հատվածի շինարարական աշխատանքների իրականացման շրջանակում ՀՀ Սյունիքի մարզի Սեղրի համայնքի տարածքում նոր հայտնաբերված Նորաշենիկի հուշարձանների (գլուղատեղի, եկեղեցի, գերեզմանոց) անվթարտությունն ապահովելու նպատակով կապալառու կազմակերպության կողմից ներկայացված պաշտպանիչ հենապատերի կառուցման նախագծային փաստաթղթերի վերաբերյալ հայտնում ենք, որ ՀՀ ԿԳՄՍ նախարարությունն առարկություններ չունի:

Հաշվի առնելով, որ աշխատանքներն իրականացվելու են նորահայտ հուշարձանախմբի տարածում, որտեղ հնարավոր են մշակութային շերտերի և հնագիտական օբյեկտների առկայություն՝ անհրաժեշտ է վերոնշյալ աշխատանքներն իրականացնել հնագետների հսկողությամբ:

Միաժամանակ հայտնում ենք, որ համաձայն ՀՀ կառավարության 2002 թ. ապրիլի 20-ի N 438 որոշման 43-րդ կետի՝ «Հիմնարկները, իրավաբանական և ֆիզիկական անձինք աշխատանքների կատարման ժամանակ պատմական, գիտական,

գեղարվեստական և այլ մշակութային արժեք ունեցող հնագիտական և մյուս օբյեկտների հայտնաբերման պահից պարտավոր են դադարեցնել աշխատանքները և դրա մասին անհապաղ հայտնել լիազորված մարմնին»:

7/29/2025

X

ԱՐԹՈՒՐ ՄԱՐՏԻՐՈՍՅԱՆ

ՀԱՐԳԱՆՔՈՎ՝ Signed by: MARTIROSYAN ARTUR 4110790255 **ԱՐԹՈՒՐ ՄԱՐՏԻՐՈՍՅԱՆ**

/պարտականությունները կատարող/

Կատարող՝ Պատմության և մշակույթի հուշարձանների պահպանության վարչության հուշարձանների վերականգնման բաժնի գլխավոր մասնագետ
Անուշ Սաղոյան, հեռ.՝ (+374) 10 599-685

No. 01/14.2/24251-2025

TO THE MINISTER OF TERRITORIAL ADMINISTRATION
AND INFRASTRUCTURE OF THE REPUBLIC OF ARMENIA
DAVIT KHUDATYAN

In response to your letter
No. DKh/34/24610-2025 dated 18.07.2025

Dear Mr. Khudatyan,

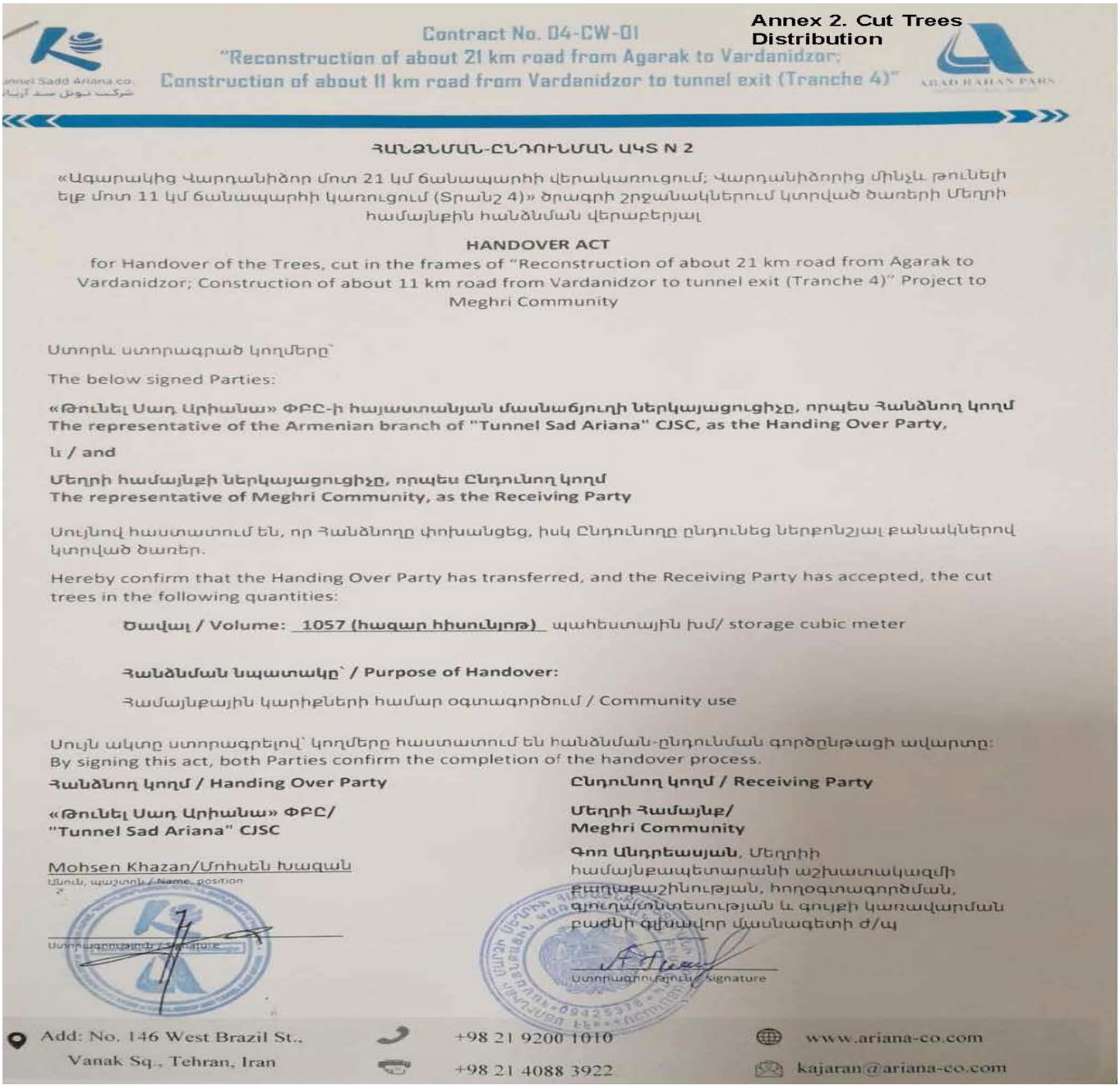
Within the framework of the construction works for Tranche 4 of the North–South Road Corridor Investment Program, Kajaran–Agarak section, in order to ensure the preservation of the newly discovered Norashenik monuments (settlement site, church, cemetery) located in the territory of Meghri community, Syunik Province of the Republic of Armenia, we hereby inform you that the Ministry of Education, Science, Culture and Sports of the Republic of Armenia has no objections regarding the design documents for the construction of protective retaining walls submitted by the Contractor.

Considering that the works will be carried out in the area of the newly discovered monument complex, where the presence of cultural layers and archaeological objects is possible, it is necessary to perform the aforementioned works under the supervision of archaeologists.

At the same time, we inform you that, according to Clause 43 of the RA Government Decision No. 438 of April 20, 2002,
"Institutions, legal entities, and individuals, upon discovering archaeological and other objects of historical, scientific, artistic, or other cultural value during the execution of works, are obliged to suspend the works and immediately inform the authorized body."

Respectfully,
Artur Martirosyan
/Acting Minister/

Annex 4- The handover Act of Cut Trees to Meghri Community



Contract No. D4-CW-01
"Reconstruction of about 21 km road from Agarak to Vardanidzor;
Construction of about 11 km road from Vardanidzor to tunnel exit (Tranche 4)"

Annex 2. Cut Trees Distribution

ՀԱՆՁՆՄԱՆ-ԸՆԴՈՒՆՄԱՆ ԱԿՏ N 2

«Ագարակից Վարդանիձոր մոտ 21 կմ ճանապարհի վերակառուցում; Վարդանիձորից մինչև թունելի ելք մոտ 11 կմ ճանապարհի կառուցում (Տրանշ 4)» ծրագրի շրջանակներում կտրված ծառերի Մեղրի համայնքին հանձնման վերաբերյալ

HANDOVER ACT

for Handover of the Trees, cut in the frames of "Reconstruction of about 21 km road from Agarak to Vardanidzor; Construction of about 11 km road from Vardanidzor to tunnel exit (Tranche 4)" Project to Meghri Community

Ստորև ստորագրած կողմերը՝

The below signed Parties:

«Թունել Սադ Արիանա» ՓԲԸ-ի հայաստանյան մասնաճյուղի ներկայացուցիչը, որպես Հանձնող կողմ
The representative of the Armenian branch of "Tunnel Sad Ariana" CJSC, as the Handing Over Party,

և / and

Մեղրի համայնքի ներկայացուցիչը, որպես Ընդունող կողմ
The representative of Meghri Community, as the Receiving Party

Սույնով հաստատում են, որ Հանձնողը փոխանցեց, իսկ Ընդունողը ընդունեց ներքոնշյալ քանակներով կտրված ծառեր.

Hereby confirm that the Handing Over Party has transferred, and the Receiving Party has accepted, the cut trees in the following quantities:

Ծավալ / Volume: 1057 (հազար հիսունյոթ) պահեստային խմ/ storage cubic meter

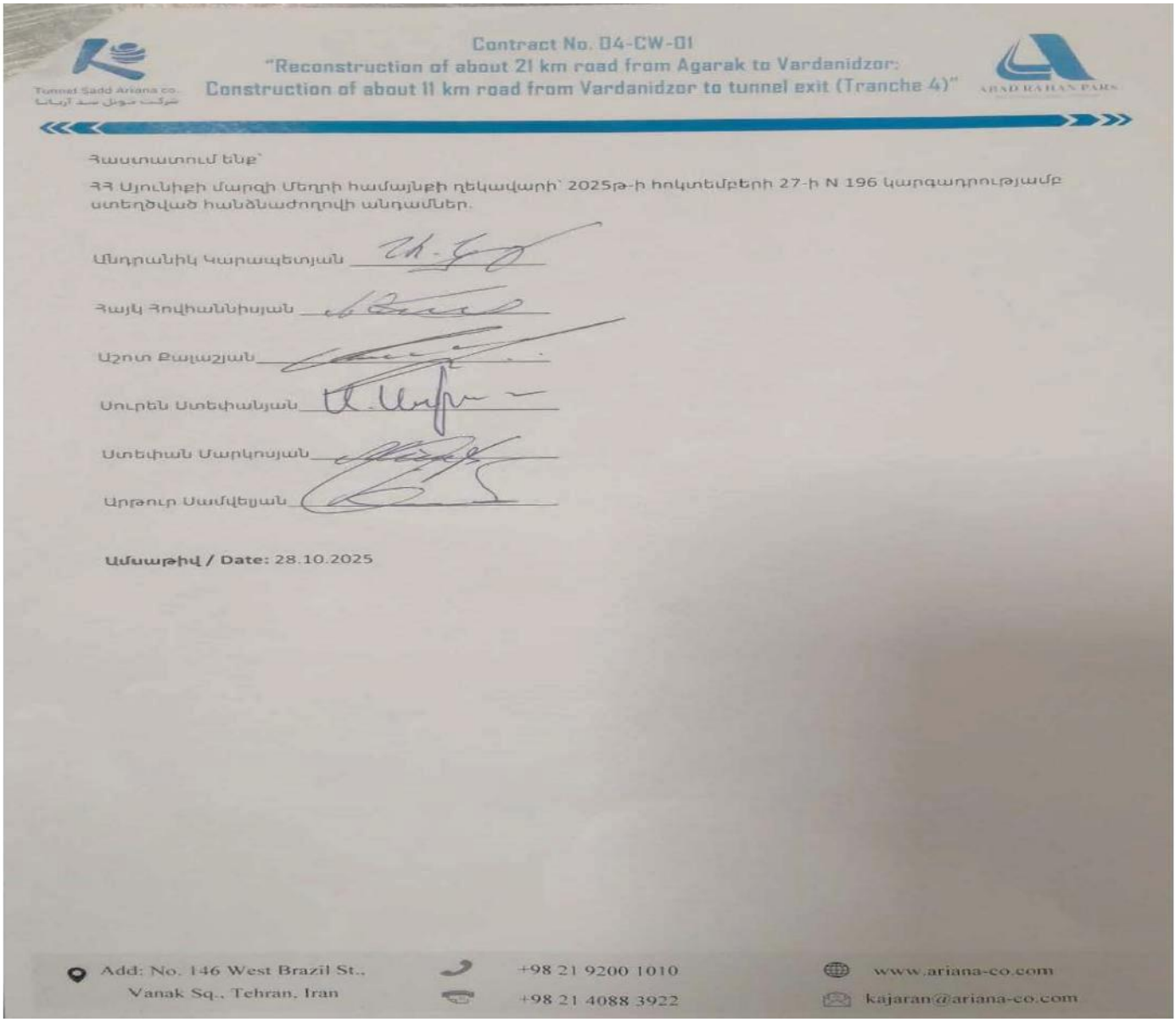
Հանձնման նպատակը՝ / Purpose of Handover:

Համայնքային կարիքների համար օգտագործում / Community use

Սույն ակտը ստորագրելով՝ կողմերը հաստատում են հանձնման-ընդունման գործընթացի ավարտը:
By signing this act, both Parties confirm the completion of the handover process.

Հանձնող կողմ / Handing Over Party	Ընդունող կողմ / Receiving Party
«Թունել Սադ Արիանա» ՓԲԸ/ "Tunnel Sad Ariana" CJSC	Մեղրի Համայնք/ Meghri Community
Mohsen Khazan/Մոհսեն Խազան	Գոռ Անդրեասյան, Մեղրիի համայնքապետարանի աշխատակազմի քաղաքաշինության, հողօգտագործման, գյուղատնտեսության և գույքի կառավարման բաժնի գլխավոր մասնագետի ժ/պ
Անուն, պաշտոն / Name, position	
Ստորագրություն / Signature	Ստորագրություն / Signature

Add: No. 146 West Brazil St., Vanak Sq., Tehran, Iran
+98 21 9200 1010
+98 21 4088 3922
www.ariana-co.com
kajaran@ariana-co.com



Tunnel Sadd Ariana co.
شرکت تونل سد آریانا

Contract No. 04-CW-01
"Reconstruction of about 21 km road from Agarak to Vardanidzor;
Construction of about 11 km road from Vardanidzor to tunnel exit (Tranche 4)"

ARAD RAHAN PARS

Հաստատում ենք՝

ՀՀ Սյունիքի մարզի Մեղրի համայնքի ղեկավարի՝ 2025թ-ի հոկտեմբերի 27-ի N 196 կարգադրությամբ ստեղծված հանձնաժողովի անդամներ.

Անդրանիկ Կարապետյան _____

Հայկ Հովհաննիսյան _____

Աշոտ Քալաշյան _____

Սուրեն Ստեփանյան _____

Ստեփան Մարկոսյան _____

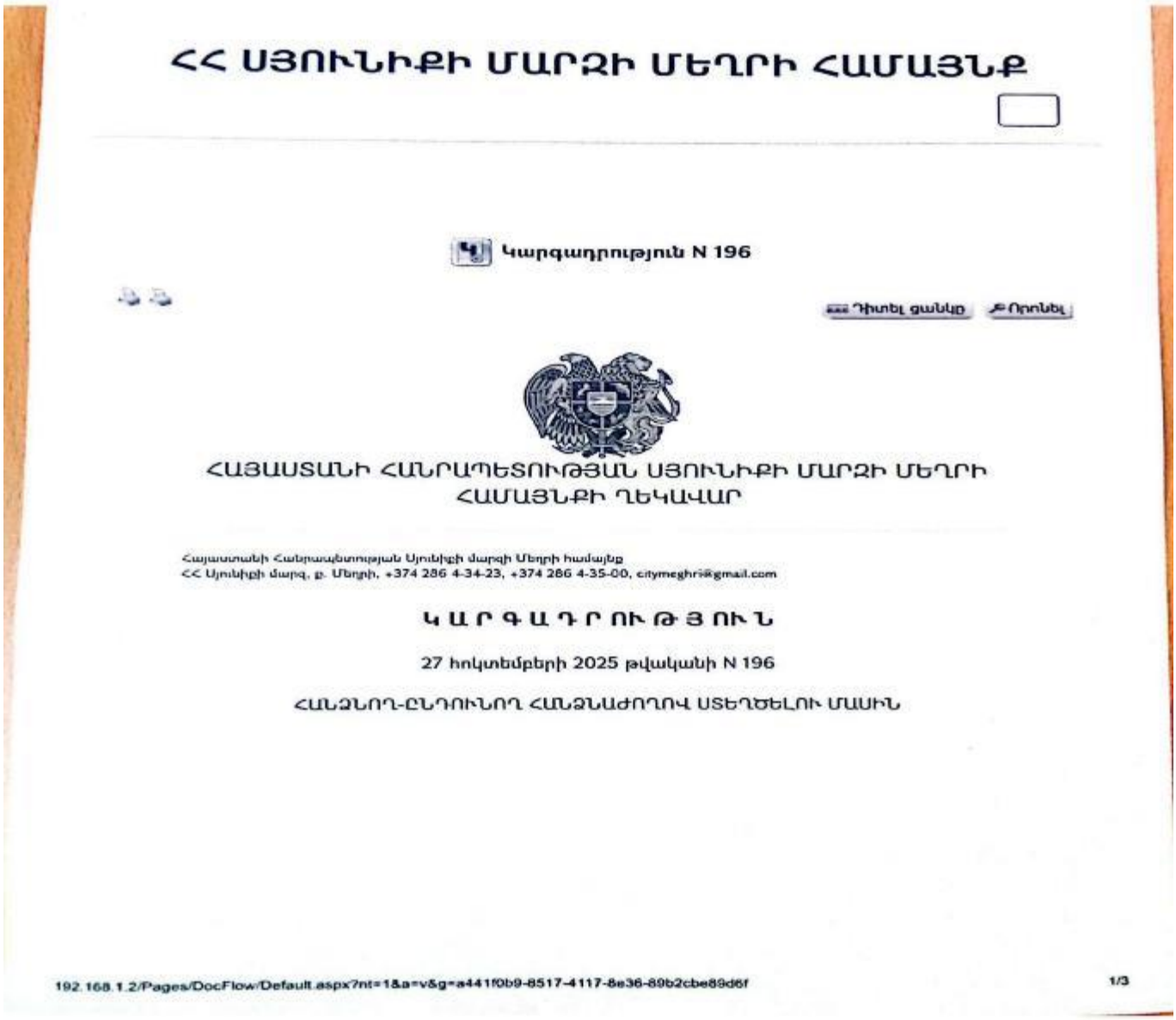
Արթուր Սամվելյան _____

Ամսաթիվ / Date: 28.10.2025

Add: No. 146 West Brazil St.,
Vanak Sq., Tehran, Iran

+98 21 9200 1010
+98 21 4088 3922

www.ariana-co.com
kajaran@ariana-co.com



ՀՀ ՍՅՈՒՆԻՔԻ ՄԱՐԶԻ ՄԵՂՐԻ ՀԱՄԱՅՆՔ

Կարգադրություն N 196

Դիտել ցանկը Որոնել

ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ ՍՅՈՒՆԻՔԻ ՄԱՐԶԻ ՄԵՂՐԻ ՀԱՄԱՅՆՔԻ ՂԵԿԱՎԱՐ

Հայաստանի Հանրապետության Սյունիքի մարզի Մեղրի համայնք
ՀՀ Սյունիքի մարզ, ք. Մեղրի, +374 286 4-34-23, +374 286 4-35-00, citymeghri@gmail.com

Կ Ա Ր Գ Ա Դ Ր Ո Ւ Թ Յ Ո Ւ Ն

27 հոկտեմբերի 2025 թվականի N 196

ՀԱՆՁՆՈՂ-ԸՆԴՈՒՆՈՂ ՀԱՆՁՆԱԺՈՂՈՎ ՍՏԵՂԾԵԼՈՒ ՄԱՍԻՆ

192.168.1.2/Pages/DocFlow/Default.aspx?nt=1&a=v&g=a441f0b9-8517-4117-8e36-89b2cbe89d6f 1/3

Сканирование с CamScanner

Ղեկավարվելով «Տեղական ինքնակառավարման մասին» օրենքի 35-րդ հոդվածի 1-ին մասի 24-րդ կետով՝

ԿԱՐԳԱԴՐՈՒՄ ԵՄ

1.Հայաստանի Հանրապետության Սյունիքի մարզի Մեղրի համայնքի հյուսիս-հարավ ճանապարհային միջանցքի ներդրումային ծրագրի 4-ի Քաջարան-Ագարակ հատվածի շինարարական աշխատանքների ընթացքում հատված ծառերը Մեղրի համայնքին հանձնելու կապակցությամբ ստեղծել հանձնող-ընդունող հանձնաժողով:

2.Հաստատել հանձնաժողովի անհատական կազմը՝

Հանձնաժողովի նախագահ՝

Գոռ Անդրեասյան - Մեղրիի համայնքապետարանի աշխատակազմի քաղաքաշինության, հողօգտագործման, գյուղատնտեսության և գույքի կառավարման բաժնի գլխավոր մասնագետի ժ/պ:

Անդամներ՝

Անդրանիկ Կարապետյան - Հայաստանի Հանրապետության Սյունիքի մարզի Մեղրի համայնքի Տաշտուն բնակավայրի վարչական ղեկավար,

Հայկ Հովհաննիսյան - Հայաստանի Հանրապետության Սյունիքի մարզի Մեղրի համայնքի Լիճք բնակավայրի վարչական ղեկավար,

Աշոտ Քալաշյան - «Էկոնոմ Էկս» ՍՊ ընկերության ներկայացուցիչ,

Մոսեն Խազան - «Թունել Սազդ Արիաննա» ՓԲ ընկերության ինժեներ,

Սուրեն Ստեփանյան - «Հյուսիս-հարավ ներդրումային ծրագրի» ինժեներ,

Ստեփան Մարկոսյան - «Զանգեզուր կենսոլորտային համալիր» ՊՈԱԿ-ի անտառագետ,

Արթուր Սամվելյան - «Արևիք ազգային պարկ» մ/ճ-ի տնօրեն:

3.Հանձնաժողովին՝ հանձնման-ընդունման աշխատանքները կատարել սկսած ս.թ. հոկտեմբերի 27-ից մինչև հոկտեմբերի 29-ը ներառյալ, հանձնում-ընդունումը կատարել փաստաթղթային եղանակով:

Հանձնող՝ Աշոտ Քալաշյան

Ընդունող՝ Գոռ Անդրեասյան

ՀԱՄԱՅՆՔԻ ՂԵԿԱՎԱՐ **ԽԱՉԱՏՈՒՐ ԱՆԴՐԵԱՍՅԱՆ**

Կից փաստաթղթեր՝
Կարգավիճակ՝
Կարգավիճակի հիմք՝
Փակ փաստաթուղթ՝ Հրապարակման ենթակա է

Annex 5 - Corrective Action Plan for compliance with the Site Environmental Monitoring Checklist

CORRECTIVE ACTIONS LOG-BOOK

No	Nonconformity description	Corrective actions	Deadline	Responsible person/s	Date implemented	Current status	COMMENT
1	SEMP for sand-washing and crushing plants to be submitted.	To draft and submit for conditional approval	20.12.2025	M. Babayan		Open	
2	SSEMP to be finalised and submitted for approval	To finalise and send formally for approval	25.12.2025	M. Babayan		Ongoing	In process
3	SEMP for the Camps to be finalised	To finalise and send formally for approval	15.12.2025	M. Babayan		Ongoing	Engineer's comments addressed, version 1.2 sent for revision
4	SEMP for DS No 13 - km 27+700 shall be drafted	To draft and submit	10.12.2025	M. Babayan	29.12.2025	Closed	
5	Permit requesting letter to be is drafted and sent to the municipality for the out of RoW areas temporary used under parking, material storage, field camps, etc. Answer is not got.	1. The process of getting the response to be facilitated. 2. After getting the permit the SEMP for camps and general SSEMP to be finalised.	1. 10.12.2025 2. one week after getting permit.	1. A. Kalashyan 2. M. Babayan		Ongoing	The letter regarding out of RoW area was sent to Meghri municipality along with respective maps. Municpality asked for more detailed maps with WGS system coordinates. A surveyor should be involved to provide requested information.

6	Permit's update is required for dumping site at km 16+400 - km 15+600 used as parking, material and wood storage. SEMP for DS at km 16+400 - km 15+600 shall be updated.	1. To draft a letter and submit to the municipality with site's map. 2. Update the SEMP and submit.	1. 10.12.2025 2. 3 days after getting permit.	M. Babayan		open	
7	Permit to transport topsoil from km 15+200 to km 16+000 for preservation was got from Meghri municipality. To be got from Syunik region municipality. SEMP for TS depot at km 16+400 to be drafted and submitted.	1. Draft a letter to Syunik marzpetaran and send. 2. Draft a SEMP for TSD and submit - can be worked out now.	1. 05.01.2026 2. 25.12.2025	M. Babayan		open	Letter with reporting data of topsoil and asking for permission to transport topsoil from 15+200 to 16+500 was sent to Govrnor's office on 22.12.25
8	Technical water usage permit should be got.	The permit package is submitted to MoE on 28.07.2025, according to MoE should be obtained on 05.12.2025.	05.12.2025	M. Babayan	08.12.2025	Closed	Water permit for Batching plant and CampN1 technical water usage is obtained.
9	Environmental permits for the crush plant to be got from the MoE.	Applications will be submitted to MoE in December 2025.	15.12.2025	M. Babayan		open	
10	All topsoil dumping sites, waste dumping sites are designated by the information signboards, fenced by tape. Indicator plates in Armenian are started to be erected.	Shall be finalised	15.12.2025	A. Kalashyan, M. Khazan		Ongoing	

11	Parking area in the main camp is set on the embankment – heavy machineries are parked closed to the edges.	Metal barriers to be erected and restriction zone – specified.	20.12.2025	M. Khazan	12/19/2025	Closed	
12	Field camps shall be set clean, tidy. - Km 37+100 – camp is inactivated; however, the area is not cleaned, waste canisters, other equipment is not removed. - Km 21+700 – next to longest bridge area - Km 20+480 – bridge construction.	All camps shall be cleaned daily. Household waste to be transported to the main camp. Waste separation areas to be designated in the camp (metal, wood, plastic, paper, etc.)	20.12.2025	A. Kalashyan		open	
13	Toilet to be installed in the camp at km 35+500 (Meghru Chanshin)	To install toilet or buy biotoilet	20.12.2025	A. Kalashyan, to facilitate	12/19/2025	Closed	
14	Concrete washout is spilled on the topsoil dump site at km 38+400.	To clean-up, collect in the bag, replace by clean soil.	20.12.2025	A. Kalashyan		Open	
15	All generators should be placed on trays for spill prevention. Some trays are available but they also are leaking. Integrity of trays to be checked and restored.	To be implemented at all working sites	15.01.2025	A. Kalashyan		open	

16	All generators (one- in batching plant area) should be placed on trays for spill prevention. Some trays are available but they also are leaking. Integrity of trays to be checked and restored.	crane in main camp is leaking - make crane maintenance. Collect contaminated soil. To spread sand under, apply trays - not leaking.	20.12.2025	M. Khazan, A. Kalashyan		open	
17	Separate waste bins for the hazardous waste collection available only in garage, however, they should be erected in all machinery repair sites (including- in the fields), machinery parking areas.	Separate waste bins for the hazardous waste should be erected in all machinery repair sites (including- in the fields), machinery parking areas. Waste bins were acquired and erected at working sites. However, it was noted that bins intended for hazardous waste are used for the general rubbish collection. Household waste bins are erected next to the hazardous waste bins.	20.12.2025	M. Khazan	12/19/2025	Closed	
18	Some cases of waste burning at working sites were detected.	Daily inform workers on site during tool-box talks. Check implementation daily	20.12.2025	M. Khazan		open	Continuous actions, control are required

19	Canteen area: liquid gas cylinders shall be kept outside the kitchen. Storage area for the refilled cylinders should be organized separately.	1. To organise liquid gas cylinders storage area outside of cantine. 2. Separate areas to be set for re-filled cylinders and empty ones.	20.12.2025	M. Khazan		Ongoing	The process of organizing separate storage of luquid gas cylinders is ongoing. To be checked during upcoming visit
20	Capacity of fire extinguishers in the camp of Rock on Road LLC is insufficient.	To acquire extinguisher at least of 10l capacity. Showel, sand to be available.	20.12.2025	A. Kalashyan	12/20/2025	Closed	In the weekly report N95
21	There are no fire extinguishers and first aid box in the machinery of ALMI LLC. - km34+000.	To acquire and supply to all machinery on site.	20.11.2025	A. Kalashyan	29.11.2025	closed	Fire extinguishers and first aid boxes are in place at Almi's camp km 34. Report was sent to Engineer
22	Canteen area: Sanitary conditions in utility rooms to be improved. Ventilation is not installed in the kitchen, just a fan.	1. Improve sanitary-hygienic conditions in utility rooms. 2. Install exhaust ventilation. 3. !!!Ready food is placed on the floor (unsanitary conditions). Some of them is placed on the wastewater drains in colanders (the bottom is not whole, but with holes)	1. 10.09.2025 2. 30.01.2026	M. Khazan		Ongoing	1 and 3 To check during next visit 2. Conditioner and fans are installed.

23	Clinic and first aid kits in the camp and work areas. Medical worker is appointed on site.	1. There is a nurse always available in the main camp in the medical shelter. However, hand-wash facility is not ensured for nurse. 2. First aid kits are not available in machinery (mainly), in some workplaces (km 35+000, km 21+480, others).	31.01.2026	M. Khazan		Open	
24	Dust level in Tunnels exceeds the norms. NC No 19 level 1 was opened. Workers continue to work in case of electricity temporary sut down.	1. submit Due diligence report for dust level in TU3. 2. No workers are allowed to work without ventilation in tunnel, Evacuation dril to be done, report submitted. 3. Due diligence has shown that even after implementation of dust suppression methods PM10 level exceeds the ambient norm. Workplace norms were taken, but they are applicable in case th workers are supplied with fullface masks with	1. 31.10.2025 2. 31.10.2025 3. 30.12.2025	M. Khazan	1.30.10. 2025. 2. 17.11.2025 3. ordered	Ongoing	1. Contractor made investigation and submitted due diligence report and proposals to control PM 10 level in tunnel. 2. Evacuation drill was done. 3. Dust measuring device should arrive till 10.01.26. 4. Full face protection masks arrived.

25	Water sprinkling machine is available on site. However, in some sites, especially on high way, where the excavation is on-going, it is dusty. Contractor shall elevate the number of sprinkling machines on site, keep permanently one in tunnel area.	To elevate the number of sprinlers on sites. To acquire water bowsers.		M. Khazan		Ongoing	It was said that one sprinkler always is tunnel- currently No 2.Shall be checked during the visit. However, for other sites to be acquired. Highway is vety dusty.
26	Noise level in tunnels is very high - above 90dBA	Ear plugs+ear muffs to be available to all workers inside the tunnels.	10.06.2025	M. Khazan		open	Ear plugs sometimes are given, No muffs were seen in tunnels. To check earmuffs during next visit

27	Siltation of water due to dumping of soil from river banks and construction waste after blasting works are seen at some construction sites next to the river side. Several Nonconformities were raised by the Engineer. During the site visit of 23.07.2025 it was noted that at km 12+400- the river is fully covered by the stones, rocks after blasting. River water is not seen. Warning letter to the Contractor and NC No 16 of level 3 were issued and sent to Contractor.	1. clean-up the river at the section km 12+300- km 12+500 - clean of construction debris and fallen trees. 2. To draft a letter to the municipality to give permit to open acces road to the river at km 19+700 - Rock on Road LLC working site. 3. To open acces road after getting permit 4. Aply for the conditional closing of the NC No 16.	1. Letter 25.12.2025	M.Babayan, A. Kalashyan		open	River flow is started to be cleaned starting from km 11+800. However, at km 12+200-km 12+500 situation is not changed yet.- October-November, 2025 Contractor shall decrease the level of the roadside at km 12 by 7-8 m down to the river at this road section, after which the access to the river 's bed will be possible. Situation is improved, however there are still sites in the river to be cleaned (km 12+300) and river banks' cleaning to be continued.
28	embankment next to river bank in the batching plant and adjusted areas to be elevated to prevent erosion and washouts by stormwater.	To make a barrier from soil and stones along the river bank on batching plant and adjusted areas- workshops.	20.12.2025	A. Kalashyan		open	

29	All hazardous waste currently is collected in separate shelter, under lock. Canisters after chemicals/dyes also are hazardous waste, but they spead over the whole territories of construction sites. All hazardous waste (including oily rugs, cloths -should be disposed in polygons permitted by the Government of the RA. It was advised to sign the Agreement with the company licensed for disposal of hazardous waste.	The licensed companies should be identified and negotiated.	31.03.2026	M. Babayan		open	
30		Contractor shall maintain records of the amount of hazardous waste temporary stored on site in log-book.	31.01.2026	M. Khazan		Open	
31	There are multiple traces of oil, lubricants spill on the ground, leakages from the machinery. Machinery maintenance should be improved. - ALMI LLC km 34+000: diesel tank in the containment tray- tank and tray are leaking; Barrels with lubricants – on the ground, without containment.	Diesel tank's tray to be clened with spill-kit. Tray to be repaired for leakages. Contaminated soil to be removed (collected in the bags) and replaced with clean soil.All barrels with liquids to be placed inside containments - trays, vessels, etc.	20.11.2025	A. Kalashyan	29.11.2025	closed	Almi's camp at km34 was cleaned, photoreport was sent to the Engineer

32	Barrels with oil in the camp's warehouse- next to the Batching plant – stored on the concrete platform but containment is not ensured. Make shelter aboveNot protected from sun.	1. To place barrels inside WH 2. To make containments on concrete outside the WH, 3. Implement shelter above to protect the barrels from direct sun rays.	20.12.2025	M. Khazan		Ongoing	A new warehouse for barrels is being constructed.
33	All working sites to be properly maintained: set accurate, no waste, spead canisters, houshold waste, especially palstic, metal cans. All working sites shall have bins for hazardous waste- separately, houshold waste - separately. Areas for waste separation shall be designated - matal, wood, plastic, paper, etc.	1. All site managers shall sign the paper that they are passed the training for site management, waste management and are obliged to implement it. 2. The violators will be fined and the list thereof will be passed to the Engineer and the RD. Warning letter will be issued. Situation is improved but the measures to be continued – 19.12.2025	30.11.2025	M. Khazan, A. Kalashyan		Ongoing	None worker to be allowed to leave the working site until he cleaned the area of waste and properly organized the site. To check working sites condition during next visit
34	New dumping site at km 27+700 – access road to is passing by through the private plot adjusted to this site. Written permit of landlord to be got.	To get written consent of landlord for access road opening.	20.11.2025	A. Kalashyan	20.11.2025	closed	

35	Km 24+240- approved dumping site is close to the river. The slope of the site is directed to the highway to prevent the erosion to the river. River is cleaned. Some soil/stone barriers to be implemented to prevent erosion to the river.	To clean up the river under this DS. Erect barriers or change the slop of the site to highway to prevent erosion by stormwater.	31.01.2026	A. Kalashyan	19.12.2025	Ongoing	The river was cleaned. Barriers to be installed at the egde.
36	Km 24+100: dump site at private plot: river under the slope to be cleaned of stones, broken trees.	To clean up the river under this DS. Erect barriers or change the slop of the site to highway to prevent erosion by stormwater.	20.12.2025	A. Kalashyan		Ongoing	In process, heavy machinery is working
37	Km 24+400; km 25+600 – batching plant adjusted areas – barrier by mound of soil is erected along the river bank to prevent from river pollution by contaminants from the sites by stormwater. In some places the height of these mounds to be elevated.	To elevate barriers	31.01.2026	A. Kalashyan		Open	
38	Dismantled road furniture (metal barriers, pipes, etc.) and communicate for the approval with the RD shall be temporarily collected in designated area.	Contractor shall decide on the provision of the area for temporary storage of dismantled road furniture (metal barriers, pipes, etc.) and communicate for the approval with the RD	20.12.2025	M. Khazan		open	

39	Works at height, access bridges, proper ladders safety rules violation.	1. No toe-boards 2. Improper platforms fixing 3. Workers do not wear safety belts. 4. to apply fines system, report on violations.	20.11.2025	M. Khazan		Ongoing	Km 35+290 scaffolding is properly assembled, with toe-board, double railing. However, 1-2 cross-bars to be added on access ladder to be easily accessible for workers approaching and leaving the working platform. - 19.12.2025 - Some nonconformities on access bridges were noted during site visit of 18-19.12.2025 (Km 35+200). Regular monitoring to be applied
40	MSDSes are not available for the all chemicals on site	ALL chemicals on site shall have MSDSes, including fuel, oil, etc.	20.12.2025	M. Khazan		open	Some MSDS were placed, photos to be provided.
41	Fatality incident has happened on 18.11.2025 during beams' construction framework pulling by crane at km 17+100. Investigation and CAPs submission is in progress. Contractor submitted the first incident report but additional testimony is required.	1. CAPs for incident to be submitted separately. 2. Crane operation instruction to be re-worked and approved by the Engineer 3. It shall be translated into Farsi and Armenian. 4. All related forms to be updated and new versions applied on sites. 5. New Safety officer apointed to be trained by Khazan and K. Azatyan 6. Deatiled final Incident report shall be submitted together with the implemented CAPs to the Engineer and the Client,	1. 09.12.2025 2. 09.12.2025 3. 20.12.2025 4. 09.12.2025 5. 16.12.2025 6. 18.12.2025	1. M. Babayan 2. M. Babayan 3. M. Khazan 4. M. Khazan 5. M. Khazan, K. Azatyan 6. M. Khazan, M. Babayan	25.12.2025	Closed	Final report was submitted to the Engineer on 25.12.2025
42	First aid boxes should be available in all machinery	Supply all machinery with first aid boxes.	20.12.2025	M. Khazan		open	
43	Safety rules information stand is erected at the entrance to TU3. However, information is not sufficient (mandatory wearing of ear plugs, muff, respirators, vests is not announced). No escape rout is designated in TU3.	To replace the information stand for one with full information. Escape rout to be designated in TU3	10.01.2026	M. Khazan		open	

44	Currently- winter season, at all working places workers are firing the wood for heating. Contractor shall prohibit placement of flammable material, liquids, canisters after flammable material next to the heating facility. Firefighting equipment shall be available at all working places.	To make proper instruction and continuous monitoring		M.KHazan		Ongoing	
45	Emergency response team to be announced, assembly area, escape routes decided and designated on site for Tunnels, field camps and all working sites.	To provide information where it is possible and realistic	10.01.2026	M. Khazan		open	
46	Flagmen shall be supplied with flags.	Supply flags to flagmen	20.12.2025	M. Khazan		open	
47	Gas cylinders to be placed 5m far from burner (welding in camps, particularly - km 35))	Instruct the welders, control over implementation	20.12.2025	M. Khazan		open	
48	Drivers also to be supplied by vests, proper shoes, helmets (crane operators) – crane at km 20+480		15.01.2026	M. Khazan		Open	
49	Drivers also to be supplied by vests, proper shoes, helmets (crane operators) – crane at km 20+481		15.01.2027	M. Khazan		Open	

50	Empty oxygen cylinders shall be collected, stores in designated are and properly arranged, covered with protective caps.	In main camp it is ensured. Should be done in field camps and working places as well.	10.01.2026	M. Khazan		Ongoing	In main camp it is ensured
51	New Jercies, tapes along the access line to the pits, trenches mainly are applied but not at all working sites (km 20+480, others). "No access" sign with designation of construction site to be applied.	1. to restrict access to all dangerous sites by tape or New Jersies, or metal barriers 2. To applies no access sign at the entries to all working sites, dangerous areas.	10.01.2026	M.Khazan		open	
52	All drivers pass medical examination each morning and get permit to drive	Records to be maintained in separate log-book for drivers	20.01.2026	M.Khazan		Open	
53	The contractor takes steps to prevent accidents, injury and disease arising in the course of the work	Contractor shall register all applications of the workers to the local ambulance and be in touch with a doctor for follow-up actions, if required. These data should be properly analised and corrective actions undertaken for repeated and elevated cases. Prepare table for data analysis.	10.01.2026	M. Khazan		open	Log-book was started to bi filled.

54	OHS training fro the whole personnel shall be repeated each 6 month and 3 months- fpr specialised dangerous works (local legal requirement)	OHS general training for the whole staff should be implemented (ERP, first aid, fire safety, etc.)	10.01.2026	M. Kazan		open	
55	There are goats seen on the construction site of km 20+480. The owner shall be warned on possible damage to the animals while on construction site to prevent possible grievance.	To make explanatory works with the owner; take written note that he/she are informed.	20.12.2025	A. Kalashyan		Closed	A discussion was held on 15.12.2025. Written consent should be got.
56	Barrels with oil (new) are stored outside warehouse in main camp, under sun, on the ground covered with concrete, however, without containment. Borders for containment to be implemented around. Cover against direct sun rays to be implemented.	1. arrange barrels inside WH 2. Implement containment barriers aroung concrete covered ground. 3. Implement cover abouve against direct sun rays.	10.01.2026	A. Kalashyan,, M. Khazan		Ongoing	Separate storage place is being constructed for barrels.
57	The cover on the Batching Plant's sedimentation well was opened, there should be metal nets installed at the openings of cover.	To place a metal net	15.01.2026	A. Kalashyan,, M. Khazan		Open	
58	The first version of BMP was submitted, commented by the Engineer and now is under revision. Should be submitted by 31.08.2025.	To finalise and send formally for approval	31.08.2025	M. Babayan	05.01.2026	Closed	The BMP was finalised and submitted to the Engineer.

59	Contractor/subcontractors shall keep topsoil accounting log-book on site and report on to the municipality.	To report on the amount of topsoil by TS depots to the municipality	05.01.2026	M. Babayan		Ongoing	Was reported to the Governor's office on 25.12.2025
60	Access prohibiting signs to be erected next to the topsoil depots with relevant text, but should be in Armenian.	To prepare bilingual signs and erect	20.12.2025	M. Khazan		open	
61	Topsoil from km 15+200 shall be fully transported to km 16+400 and the site handed over to the owner. .	1. To transport topsoil to km 16+400 2. sign up handing over act	20.12.2025	A. Kalashyan	29.12.2025	Closed	Handover act with 15+200 land owner to be signed.
62	Medieval bridges to be protected by retention wall. Acient grape farms to be protected- proposal is approved by the Engineer and submitted for the RD's approval.	1. Get Engineers approval and proceed with retention walls construction to protect the bridges. 2. acient wineries to be investigated and registered by the Institute of Archaeology.	1. 30.12.2025 2. 30.12.2025	1. Engineer 2. Haik Haydosyan (archaeologist)		Ongoing	1. - Under revision 2. MSECS gave approval, Contract with the IA is signed.
63	Fire extinguisher was erected at entrance to tunnel – not sufficient volume. Extinguishers shall be erected inside tunnel as well – at each 20 m.	To install fire extinguisher inside tunnels as well (no 2 and No3)	10.01.2026	M. Khazan		open	
64	Mud is at the entrance to tunnel. Should be covered with gravel. Wooden access road shall be implemented for visitors.	1. To apply gravel 2. implement wooden access road inside tunnels - for pedestrians.	20.12.2025	M. Khazan		open	

65	Field camp next to TU3: Area to be accurately organized. All areas to be designated: for waste – waste separation; for construction material- for each type- separately. Barrels with water designated for hand wash, drinking water to be labeled. Sink like appliance to be installed under the crane for hand wash, Bin for household also to be labeled accordingly.	1. Housekeeping to be implemented 2. Designate areas for waste separation 3. label water -for handwash, for drinking 4. install sink under handwash container. 5. Houshold and hazardous waste bins to be labeled accordingly.	20.12.2025	M. Khazan	19.12.2025	Closed	Technical water is labeled, concrete sink is done. 
66	Tunnels	Electrical cables coming out of electrical cabinets are spread on the ground. Engineer's electrician appraisal shall be taken into account.	31.01.2026	M. Khazan		Open	
67	construction waste transporting trucks: they have no forehead border and during transportation stones and soil are dumped on the road! The trucks in same conditions were noted during site visits	1. repair all trucks and install forehead border. 2. Cover the construction waste, material during transportation on high ways.	10.01.2026	M. Khazan		open	

68	Crushing plant and sand washing plant, km 25+000: All territory is muddy.- partly covered by gravel. To be continued. Wooden access road to be implemented for visitors.	1. cover territory with gravel 2. erect wooden access for pedestrians.	10.01.2026	M. Khazan		open	
69	sand washing plant, km 25+000: Drainages to be implemented to collect water runoffs and direct them into the sedimentation well No3.	To implement drainages	20.12.2025	M. Khazan, A. Kalashyan		open	
70	Big stones crush plant is ready: electrical cables are spread on the ground. To be set underground to prevent damage and for safety.	To put electrical cables under ground.	20.12.2025	M. Khazan		open	
71	Big stones crush plant: The plant is set on the embankment. The edges to be protected by metal barriers	To implement metal barriers along the edges of embankment/	20.12.2025	M. Khazan		open	
72	Crusher plant: Safety warning signs, safety rules' stand to be erected	Erect safety rules stands, saftey signs on the whole territory of plants	20.12.2025	M. Khazan		open	
73	Km 25+000 – crush plant: welding was done next to the fired stove. Fire extinguisher is not available at crusher plant, neither- the first aid box.	To provide fire-extinguishers and first aid boxes. Instruct workers regarding welding rules.	15.01.2026	M. Khazan		Open	
74	Pollution of highway with dust, mud brought by the vehicles' wheels. About 5 m of gravel coverage should be implemented at all crossroads of access roads and highway.	1. To apply gravel at all exits to the highway if applicable. 2. install wheels washing facility at the steep descent access roads.	20.12.2025	A. Kalashyan		open	