Environmental Monitoring Report

January 2018

AZE: Road Network Development Program, Tranche 4

Prepared by Azeravtoyol Open-Joint Stock Company for the Republic of Azerbaijan and the Asian Development Bank.

Final Environmental Monitoring Report

January 2018

Republic of Azerbaijan:
Road Network Development Program – Tranche 4

(Financed by the Asian Development Bank)

Prepared by ***Azeravtoyol OJSC*** for the Asian Development Bank (ADB).

ABBREVIATIONS

ADB	–	Asian Development Bank
AAY	--	AzerAutoYol OJSC
EIA	–	Environmental Impact Assessment
EMP	–	Environmental Management Plan
EPM	–	Environmental Protection Manager
EPP	–	Environmental Protection Plan
EHS	–	Environmental, Health and Safety
GRM		Grievance Redress Mechanism
GFP	–	Grievance Focal Person
MENR		Ministry of Ecology and Natural Resources
PIU	–	Project Implementation Unit
PPE	–	Personal Protective Equipment
SSEMP	–	Site Specific Environmental Management Plan

WEIGHTS AND MEASURES

m – Metre
km – Kilometre

1. INTRODUCTION

1.1. Background

1. The Four Bridge and Local Roads (40 km) Improvement Project in Ganja region, Agstafa District was intended to optimize social and economic development in the Project Area through improved transport facilities. All four (4) bridges were situated in the Ganja Region and carry regional (R) or local (Y) roads over rivers or railways. The lengths and types of the existing bridges vary and all showed signs of severe distress and lack of maintenance.

2. The Executing Agency for the project was Azeravtoyol Open Joint Stock Company (Azeravtoyol). The Engineer appointed by Azeravtoyol was IRD Engineering. And the construction contractor for the works was KBT.

3. An Initial Environmental Examination (IEE) was carried out and disclosed for the project in 2013. The IEE was approved by "Azeravtoyol" and ADB, and has served as a basis for the development of the specification and contract documents, and for the preparation and pricing of the Contractor Environmental Management Plan (EMP). Later in May 2017 IEE was updated and disclosed for new component rehabilitation of Local Roads.

4. Key milestones relating to the construction contracts are summarised below:

- Contract Agreement: 5th November 2015.
- Notice to Commence was issued on 15th January 2016.
- Completion dates 31st August 2017

1.2. Project Details

5. The new bridges replaced existing bridges at same locations. The geometry and design parameters were changed to be in accordance with National Standards for Bridges on Category III roads. The structural layout was changed to a single span bridge (instead of a triple span bridge) both, due to safety reasons and cost optimization. Local roads also rehabilitated on an existing alignments connecting Vurghun – Kohna Gishlag vllages – 16,1 km; Agstafa - Ashagi Kesemen - Zelimkhan village roads – 9,6 km; Soyugbulag – Tiglik village roads – 9,3 km; Kommuna village road – 2,6 km and Duzgishlag village roads – 2,3 km.

6. Following tables/figures describes the project components in more details:

Table 1: Bridge No. 1, R-24 Agstafa-Poylu-Sadiqli Road, km 2+000

Location:	Road R-24 (km2.0)	Total Length	21.80 m
Road Category	Cat. III	Span Length	21.80 m
Type of Cross Section	Railway	Material	Concrete
Design Load	HK 100	Deck Construction Method	Erection by crane
Deck Type	Precast pre-stressed beams / RC slab cast in-situ	Construction Time	1.5 years

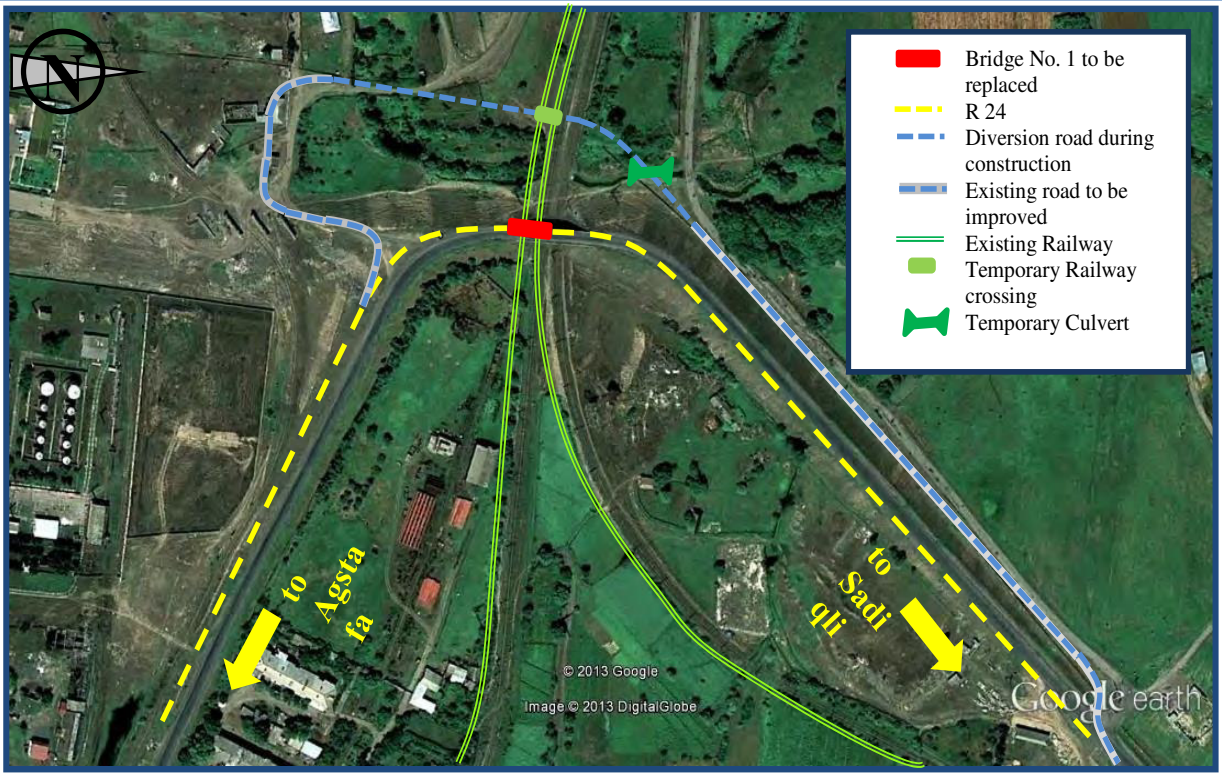


Table 2: Bridge No. 2, R-24 Poylu-Sadiqli Road, km 17+000

Location:	Road R-24 (km17)	Total Length	170.00 m
Road Category	Cat. III	Span Length	42.4+85+42.5
Type of Cross Section	Kur River	Material	Precast concrete
Design Load	HK 100	Deck Construction Method	Segmental/short line precast
Deck Type	Precast pre-stressed box girder	Construction Time	2 years

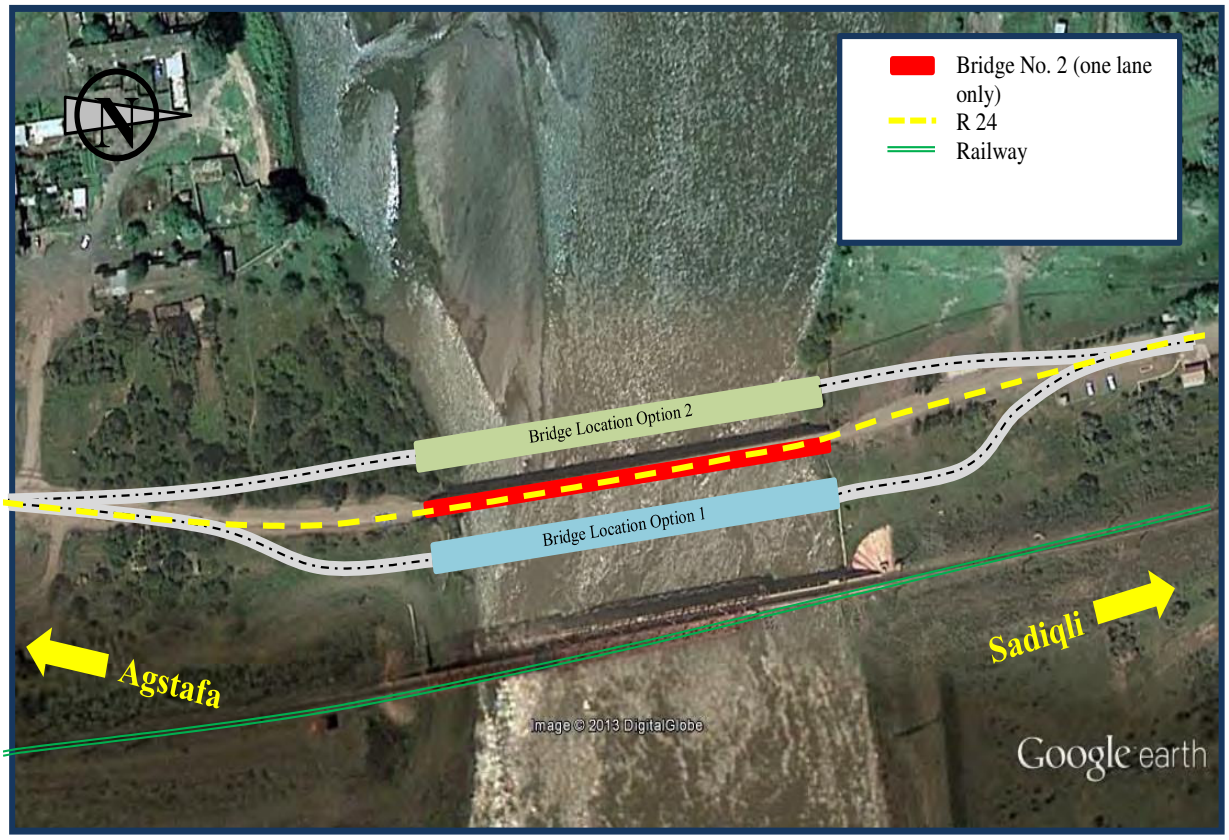


Table 3: Bridge No. 3, R-24 Poylu-Sadiqli-Gurcustan Road, km 29+500

Location:	Road R-24	Total Length	54.00 m
Road Category	Cat. III	Span Length	18+18+18m
Type of Cross Section	Aji Dara River	Material	Concrete
Design Load	HK 100	Deck Construction Method	Erection by crane
Deck Type	Precast pre-stressed beams / RC slab cast in-situ	Construction Time	1.5 years

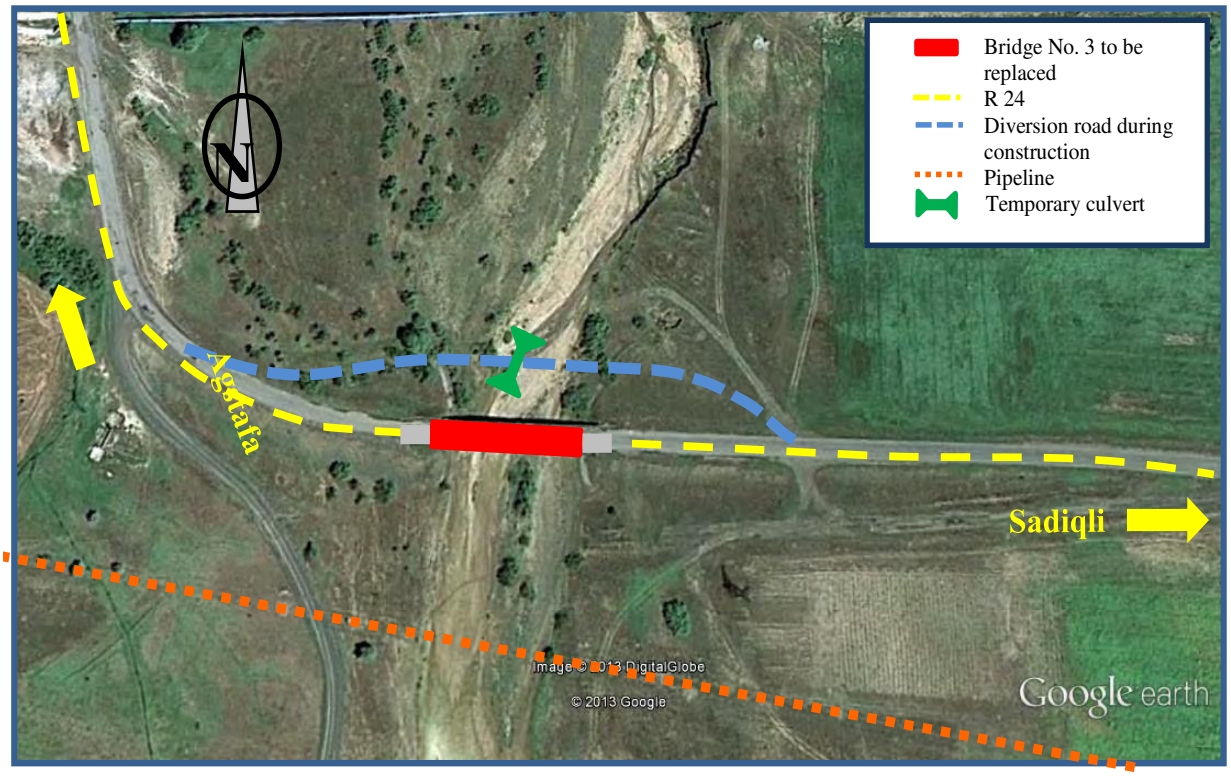
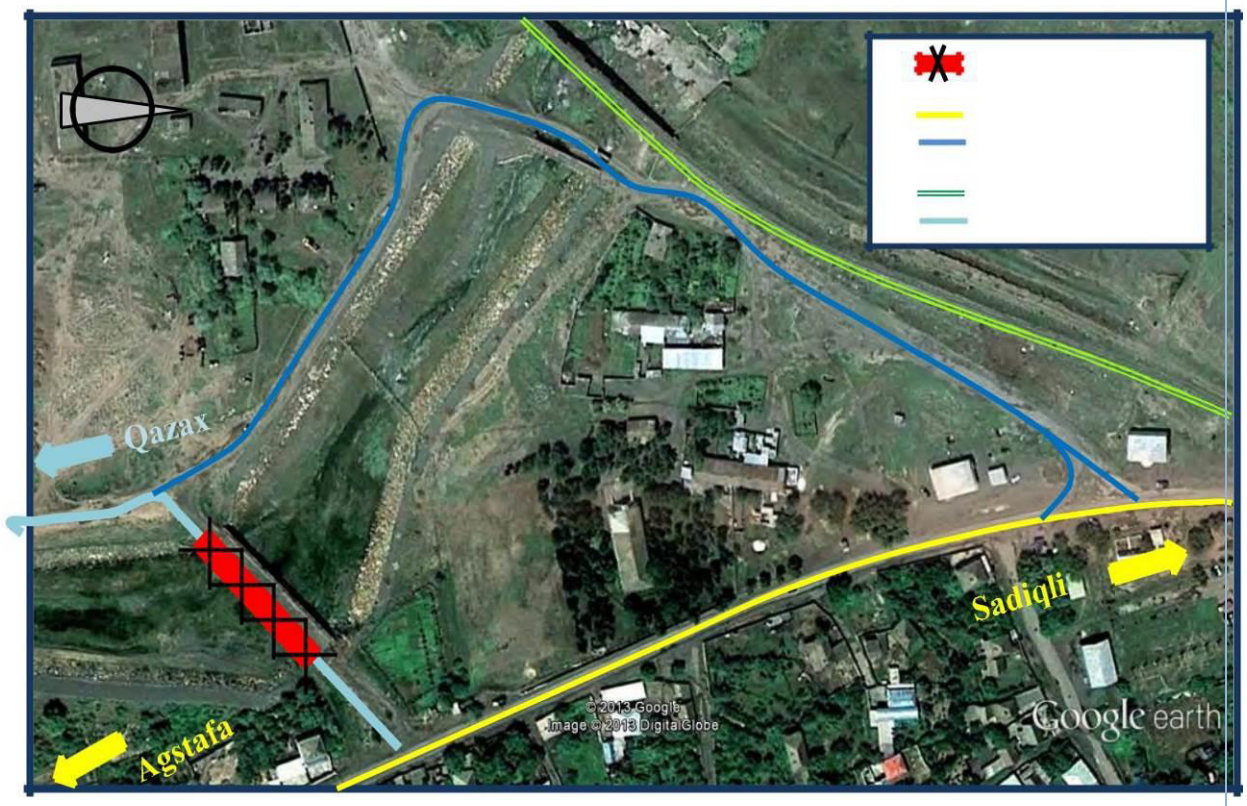


Table 4: Bridge No. 4, Y-05-08 Poylu-Duzqislaq-Qazax Road, km 0+100

Location:	Road R-24	Total Length	72.00 m
Road Category	Cat. III	Span Length	24+24+24
Type of Cross Section	Agstafa River	Material	Concrete
Design Load	HK 100	Deck Construction Method	Erection by crane
Deck Type	Precast pre-stressed beams / RC slab cast in-situ	Construction Time	1.5 years



1.3. Project works progress

7. All the works within the frame of the project already completed and following Table 5 shows the progress of project works as of the end:

- Road painting (yellow and white line): 126,000 m;
- Road signs installation: 296 pcs;
- Complation of asphalt layer of the local village roads 80,5 thsd ton
- Restoration and rehabilitation works (camp site decommissioning; bridge slope protection measures; traffic management measures)

Table 5: Progress of the Project

Item	Progress (%)
Bridge #1 Progress	100
Bridge #2 Progress	100
Bridge #3 Progress	100
Bridge #4 Progress	100
Local roads rehabilitation	100
Physical Progress	100
Financial Progress	100

1.4. Objectives of the Final Environmental Monitoring Reporting

8. This Final Environmental Monitoring was prepared by AAY Engineering with objective to inform ADB and any other interested parties of the status of the envisaged environmental management measures. The report includes brief description of the project, an update on overall project progress, undertaken environmental management plans and monitoring activities, non-compliance notices and corrective actions, management of grievances, and findings of the post-construction environmental inspections undertaken during and after the construction period.

9. Previously two semi-annual environmental monitoring report submitted to ADB as per SPS (2009) requirement, summarizing the environmental safeguards management of the project. This is third and last report within the framework of the MFF RNDP T4.

10. Previous BA-EMRs covered the following periods:
    - First: 1st July 2016 to 31st December 2016.
    - Second: 1st January 2017 to 30th June 2017

1.5. Methodology

11. The findings of the Report were based on:

- Review of the project related environmental monitoring documents and reports, including the IEE, EMP, the Contractors' Quarterly Environment reports, Health and Safety and (EHS) Reports, Grievance Registers; Reports on conducted trainings for staff and workers and community meetings; and the field and site inspection reports of the Engineer's EHS Manager;

- Notices and correspondences between the PIU, Engineer and the Contractor on environmental compliance issues,

- Analysis of information and observations from the site visits, including camp sites, road works observations and other worksites,

- Meetings with the staff of the PIU, Engineer and the Contractor, as well as discussions with the construction workers during the site visits,

- Illustration of environmental compliance issued by photos taken during the site visits and final audit.

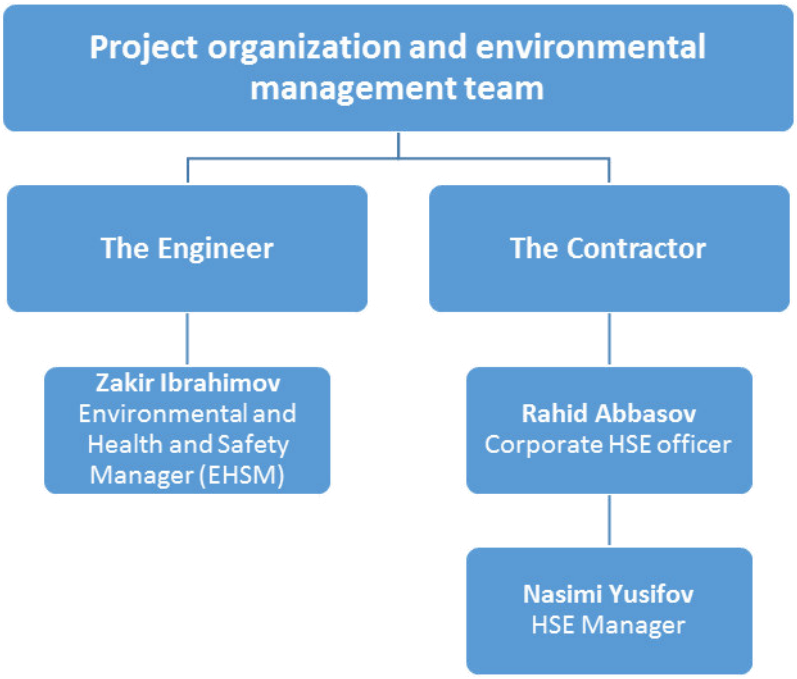
1.5 Project organization and environmental management team

12. The contract was managed as follows from the perspective of environmental safeguards:

    - The Owner's (AAY) Project Implementation Unit (PIU) included one Environmental Specialist, responsible for oversight of the environmental safeguards aspects of the project, and charged with liaison with the Engineer's and ADB's environmental management teams. The AAY specialist was also responsible for reporting to ADB.
    - Contractor had an Environmental Protection Manager (EPM) as part of their site team. The EPM was responsible for preparing the SSEMP, obtaining the required permits and approvals, managing the Grievance Redress Mechanism (GRM), implementing public consultations, managing instrumented monitoring, conducting site audits and training, and preparation of quarterly environmental management reports.

    - The Engineer's EHS team comprised included one International Environmental Specialist a National Environmental Specialist. The National Environmental Specialist was responsible for day-to-day oversight of the contractor's works, and for weekly site audits. The International Environmental Specialist was responsible for providing advice and support to the contractor and AAY (particularly with respect to SSEMP, monitoring and reporting), for advising and training the National Environmental Specialist, for carrying out periodical site audits, and for preparing the draft EMRs.

Figure 1: Project organization and environmental management team



1.7. Relationship between Contractor, owners, lenders, etc.

13. The relationships between the Contractor, Engineer, Azeravtoyol and ADB were considered normal working relationships. Communications on environmental issues were carried out routinely. The Contractor, Engineer, Azeravtoyol OJSC and the ADB's environmental safeguard specialist had periodical meetings. Engineer's staff had regular site inspections.

14. The Engineer and the Contractor had communicated many issues also through telephone and emails. The Contractor regularly provided reports and the observed issues had been reflected in the previous bi-annual reports of the Engineer. During project implementation, ABD environmental specialists provided advice and conducted periodic monitoring, visited the sites and had discussions on the identified issues, clarifications on the necessary training for staff, documents keeping (checklists, grievances), and reports requirements of ADB. Communications of these parties included also issuance of non-compliance notices and corrective actions.

15. According to its contractual obligations, the Contractor prepared and submitted monthly and quarterly environmental and safety reports including the project progress, environmental management activities, results of regular site inspections, grievances and conducted community meetings and training for personnel.

2. Environmental Safeguards Management and Monitoring

2.1. Environmental Aspects for Management and Monitoring

16. According to the requirements of SEMP and KBTs contract, KBT was responsible for instrumental monitoring of air quality, water quality and noise during the overall project implementation period.

2.2. Instrumental Environmental Monitoring

17. According to the SSEMP and the Contractors contract, the Contractor was responsible for instrumental monitoring of air quality, water quality and noise.

18. **Air Quality Monitoring** – Air quality monitoring was carried out by the Contractor regularly as per SSEMP during the Construction period. All results were provided in respective reports to AAY and to ADB. No noise monitoring were carried within reporting period.

19. **Noise Monitoring** – Regarding noise, the Contractor undertook regularly noise monitoring at the request of the Employer. All results were provided in respective reports to AAY and to ADB. No noise monitoring were carried within reporting period.

20. **Water quality monitoring.** Regular water quality monitoring was undertaken during the project implementation. Latest monitoring were done in June, 2017 at Bridge 2, Bridge 4 and At the surface water behind KBT Construction Camp. Results were provided in previous semi-annual report. Due to the lack of physical works over the bridges and near by the water sources within last six months no water quality monitoring were conducted and therefore no results were provided in current report.

2.3. Visual Monitoring

21. Visual monitoring included mainly inspections of all sites and was carried out routinely. Azeravtoyol as an Executing Agency also had ad hoc visits to the sites. The Engineer's team discussed the observed environmental incompliance with the Contractor on the site and provided instructions for corrections. As needed, non-compliance notices were issued to the Contractor. Following points were visually monitored during the overall construction period:

- Waste management (including storage and disposal)
- Health and safety management
- Storage, utilization and disposal of hazardous materials
- Traffic management (dust protection measures, trucks control: weight; haulage, washing and etc.)
- Water flow management during bridge construction period
- Overall visual inspection of water and soil pollution due to the leakages
- Maintenance of equipment and machinery

3. ENVIRONMENTAL MANAGEMENT

22. The environmental monitoring and management activities for the project were carried out according to the findings of the IEE and EMP that were prepared in compliance with the environmental safeguards requirements of the ADB Safeguard Policy Statement (2009), as well as legislation of the Republic of Azerbaijan.

3.1. Documents

23. Part of KBTs environmental obligations was the production of Quarterly Environmental, Health and Safety Reports based on the findings of regular site inspections. The KBT HSE Manager, Nasimi Yusifov, was responsible for this and all other environmental management issues relating to the contract. All required reports were provided in time during the project implementation period.

24. KBT also has the responsibility to complete the bi-weekly EHS checklists that form part of his SSEMP obligations. Checklists were prepared on a bi-weekly basis and they were documented in the HSE Managers office and provided to the Engineer on a regular bases.

25. The SSEMP and its supplementary plans were prepared by Contractor and has been approved by the Engineer. Following table lists the plans that were prepared under this project:

Table 6: SSEMP and supplementary plans

Document Ref #	**Item**	**Status**
02/2014/AZE SSEMP	Site Specific Environmental Management Plan	**Approved by Engineer**
02/2014/AZE WMP	Waste Management Plan	**Approved by Engineer**
02/2014/AZE WQMP	Water Quality Management Plan	**Approved by Engineer**
02/2014/AZE AQMP	Air Quality Management Plan (Including dust suppression plan)	**Approved by Engineer**
KBT-02/2016/AZE_TMP	Traffic management plan	**Approved by Engineer**
02/2014/AZE NMP	Noise Management Plan	**Approved by Engineer**

KBT-02/2016/AZE_PQP	Health and Safety Plan	**Approved by Engineer**

3.2 Permits and other required documents

26. The KBT was responsible to ensure that third party has all necessary permits related to environmental, health and safety. All the permits were checked and renewed by third party after expiration date over the project implementation period. List of permits are given at following table:

Table 7: Permits and licenses

Location	Permit / License	Date Obtained	Update / Action
Concrete Batching Plant	Eco. Expertise Approval	18.04.2013	None. Required only once.
Stone Crushing Plant	Eco. Expertise Approval	18.04.2013	None. Required only once.
	Ecological Passport	18.10.2013	None. Required only once.
Borrow Pit	Land Acquisition	23.12.2013	None. Required only once.
	Eco. Expertise Approval	18.04.2013	None. Required only once.
	Ecological Passport	18.10.2013	None. Required only once.
	Limits of Emissions to the Atmosphere	18.10.2013	None. Required

3.3. Site Inspections and Audits

27. Inspections and audits were carried out via quarterly visits to site by the Engineer's international environmental specialist, in addition to *ad hoc* visits by AAY's environmental specialist. Local specialist working for the Engineer, was site based and conducted weekly audit of the project implementation. ADB Safeguards

specialists also visited the site on occasion to verify implementation of the SSEMP, and providing recommendations for follow-up.

28. Reports of all site inspections and audits were prepared and documented. Summaries were provided in previous semi-annual environmental monitoring reports. During reporting period Final Environmental Audit has been conducted. Summary of findings are provided under Section 4, Section 5 and Table 10.

29. Each of the audits carried out by the Engineer's international environmental specialist included the following tasks:

- Kick-off meeting with AAY;
- Kick-off meeting with site teams (contractors, EPMs, Engineer);
- Site audit of alignment and any other working areas such as borrow pits;
- Site audit of construction camps, workshops, fabrication yards and other facilities (during both of the above, all previous non-compliances were checked for resolution, plus inspections for new non-compliances were carried out);
- Review of documents, records, GRM, etc.;
- Discussion with each EPM regarding project status, recent actions, non-compliances, and follow-up;
- Wrap up meetings with site staff, AAY, and on occasion, ADB.

3.4. Non-Compliance Notices and Corrective Actions

30. Non-compliance issues were observed during the project implementation period. Usually they were restricted to minor environmental issues such as small amount of debris/rubbish remained at the Site, idle operation of vehicles, in proper domestic waste management and etc. were observed which were corrected immediately after instructions to Contractor on a mutual or written bases. It was later audited and monitored by Engineer and on a ad hoc bases by AAY specialist. All these issues and corrective actions were well documented and provided to ADB within semi-annual reports prepared during previous reporting periods. There was not any non-compliances observed within current reporting period.

3.5. Training

31. During the initial stages of the project there have been no training programs provided to staff in matters relating to health and safety and environment. KBT has been notified by the Engineer that basic environmental and health and safety training must be undertaken on a regular basis. Later Contractor developed and implemented following training for staff as was required by SSEMP:

Table 8: List of training conducted by KBT.

Date	Training	Participants

06 January 2017	Protection (rules) from cold, snow and ice	7
24 February 2017	Safety at office and to comply with hygiene regulations	9
31 March 2017	PPE	9
14 April	Waste Management	10
25 June	PPE	11

32. There was no training during the current reporting period.

33. Besides, regular on the job training on implementation of SSEMP requirements on various environmental, health and safety measures were provided to staff by engineer's and contractors HSE staff. International specialist also provided necessary assistance and capacity building works during his visit to project sites.

3.6. Grievances Redress Mechanism

34. Well functioning GRM based on AAY experience from other projects were established for this project. IT was discussed and approved by all parties. It was communicated to the communities around the project via leaflets and during the public consultation meetings.

35. A grievance register was maintained, in which all complaints and comments were logged, alongside details of the complainant, and how and when the issue was resolved. Most grievances were dealt with swiftly and satisfactorily. A total of 21 grievances were made during the overall project implementation period. There was no any grievances within current reporting period. No unresolved grievances remain open. Lists of all grievances lodged are provided in Tables 5:

Table 9: List of grievances during project implementation period:

No:	Address	Date Received	How grievance was received	Plaintiff	Description of the issues/complaints	Status
1	Gazakh city, A.Mustafayev street No:14	24.10.16	Written	Zeynalov Surkhay	The detour road near the Bridge No1 is a bad condition. Local people suffer from this condition.	Solved. Road was repaired by Contractor.
2	Akstafa city, Osman Sarvarli street No:13	24.10.16	Written	Mammadov Subhan	The detour road near the Bridge No1 is a bad condition. İt creates a problems in our cars.	Solved. Road was repaired by Contractor.
3	Tovuz district, Eyyublu village	24.10.16	Written	Umudov Vugar	Due to construction of new Bridge No1. Temporary road is a bad condition	Same as above
4	Akstafa district, Dagh-Kasaman village	25.10.16	Written	Valiyeva Kamala	The detour road near the Bridge No1 is a bad condition.	Same as above
5	Gazakh city, H.Aliyev avenue, home 65	25.10.16	Written	Nasibov Novruz	The detour road near the Bridge No1 is a bad condition.	Same as above

No:	Address	Date Received	How grievance was received	Plaintiff	Description of the issues/complaints	Status
6	Akstafa district, Mughanli village	25.10.16	Written	Mughanli village residents	The detour road near the Bridge No1 is a bad condition.	Solved. Road was repaired by Contractor.
7	Aksatafa district, Ceyranchol village	22.11.16	Written	Guliyev Ekhan	The detour road near the Bridge No1 again is in a bad condition.	Solved. Road was repaired by Contractor. Contractor instructed to pay regular attention and to repair road on a regular bases if will be required.
8	Gazakh district, Aghkoynak village	22.11.16	Written	Maharramov Samandiyar	The detour road near the Bridge No1 again is in a bad condition.	Solved. Road was repaired by Contractor. Contractor instructed to pay regular attention and to repair road on a regular bases if will be required.
9	Gazakh city, A.Mustafayev street No:14	23.11.16	Written	Zeynalov Surkhay	The detour road near the Bridge No1 again is in a bad condition.	Solved. Road was repaired by Contractor. Contractor instructed to pay regular attention and to repair road on a regular bases if will be required.
10	Gazakh district, Dagh-Kasaman, home 21	23.11.16	Written	Mammadov Subhan	The detour road near the Bridge No1 again is in a bad condition.	Solved. Road was repaired by Contractor. Contractor instructed to pay regular attention and to repair road on a regular bases if will be required.

No:	Address	Date Received	How grievance was received	Plaintiff	Description of the issues/complaints	Status
11	Gazakh district, home 9	23.11.16	Written	Huseynov Emil	The detour road near the Bridge No1 again is in a bad condition.	Solved. Road was repaired by Contractor. Contractor instructed to pay regular attention and to repair road on a regular bases if will be required.
12	Akstafa district, Poylu village	22.11.16	Written	Suleymanov Gurban	The detour road near the Bridge No1 again is in a bad condition.	Solved. Road was repaired by Contractor. Contractor instructed to pay regular attention and to repair road on a regular bases if will be required.
13	Akstafa district, Poylu village	11.10.16	Written	Sayadov Fuad	Every day I walk to the work. Due to construction of Bridge, i can't cross the river easily. The company doesn't/t gives any information about the exact completion day of construction as well as sometimes creates various problems for us to cross the river.	Immediately Contractor was instructed and access road was provided at mentioned point. Contractor organized consultation meeting with Poylu village people on 15.10.16 and provided all necessary information to local people.
14	Akstafa district, Poylu village	20.10.16	Written	Zulfi Hasanov	I live in Poylu village and works as taxi driver. After the rain it is really difficult to drive in detour road near the Bridge No.1 and it creates various problems in my car. And repairing car is cost a lot.	Same as No 1.
15	Akstafa district, Poylu village	18.10.16	Written	Allahyarov F.	Construction of new bridge over the river in the Poylu village, I can't cross	Same as above.

No:	Address	Date Received	How grievance was received	Plaintiff	Description of the issues/complaints	Status
					the river easily.	
16	Akstafa district, Poylu village	22.08.16	Written	Gahramanova Z.	Sometimes there is 24 hours' work in construction of Bridge No: 2 at Poylu village and I can't sleep and rest at night.	Solved. Contractor instructed all sub-contractors to follow working hour rules as described in their contracts. Engineer's specialist will follow and regularly will audit the issue.
17.	Akstafa city	04.01.17	Written	Javid Karimov	Due to the construction of the bridge on Akstafa, the detour road was a bad condition. Please undertake necessary measures on this problem.	We have instructed the contractor to ensure that the road was in an acceptable condition, including regular spraying with a water bowser to reduce dust impacts. Soon the bridge was completed and the bypass no longer required.
18.	Sadikhli village	11.01.17	Written	Vilayet Mammadov	There was ongoing construction of the bridge a place known as "Acidara" near the Akstafa- Sadikhli road. There was detour road near this area. And there were lots of trash near the detour road and the bridge. Please undertake necessary measures on this problem.	The Contractor has been instructed to remove the waste material. The problem was solved as required.

No:	Address	Date Received	How grievance was received	Plaintiff	Description of the issues/complaints	Status
19.	Poylu village	18.02.17	Written	Abbasov Sagif	During the windy days there was dust near the construction of the bridge over the Kur river.	The Contractor were instructed to undertake regular watering of this area during periods of high wind and the problem was solved.
20.	Sadikhli village	05.03.17	Written	Elshan Guliyev	The detour road near the Bridge No1 was a bad condition.	We have instructed the contractor to ensure that the road was in an acceptable condition, including regular spraying with a water browser to reduce dust impacts. Soon the bridge was completed and the bypass no longer required.
21	Karahasanlı village	20.03.17	Written	Orujali Tahirov	Old bridge near the Bridge No: 4 was in a bad condition. Please accelerate the works of the construction of the bridge.	Noted, the works for bridge 4 were completed within the next couple of months and the problem was solved

3.7 Community Meetings

36. Public consultations were held on a monthly basis in villages surrounding the project works. The consultations met the basic requirements of communicating to the public the planned works schedule and locations and the Grievance Redress Mechanism, and they also permitted the attendees to ask questions and lodge complaints. Minutes of the consultation meetings were appended to the relevant EMRs. No community meetings were held during current reporting period. Photos from previous period meetings below describes the meetings held with local people. Details on previous meetings were provided in respective reports during 1st and 2nd semi-annual reports:

Figure 2: Community meeting photos (March – April, 2017)

4. POST-CONSTRUCTION SITES INSPECTIONS

37. The Engineer conducted post-construction environmental inspections in accordance with the ADB requirements in all areas of the completion of construction works.

38. Works at all four bridges and local village roads are now completely finished. Local people already begin to experience the advantages of the new roads and bridges, including the reduction in environmental impacts such as noise, air pollution and accidents.

39. The final environmental site audit took place in November - December 2017. The audit's main objective was to verify that the completion of the works took place within the bounds of the SSEMP and contract specifications, and that site reinstatement was carried out correctly.

4.1 Reinstatement

40. As mentioned above four all construction works are complete now, with all bridges and local roads asphalted and central reservations completed. Bridges and its approach roads are completed, road furniture and line paintings also completed.

Figure 3: Completed bridge and village road with all necessary road signs and line paintings.

41. Contractor did not have any stockpile as the material were provided by third party on a need base and there was not need to do any reinstatement work related to the stockpile and top soil. All along the bridges alignment, the Right of Way has been smoothed, and compacted where necessary. The site was found to be clean and tidy, with no evidence of waste, equipment, or materials from the construction works.

42. Culverts inspected were all clear and running, and vegetation is starting to re-establish itself on worked ground.

Figure 3: Clean and smoothed alignment with natural vegetation re-establishment; open village road to traffic.

43. Bridges and local roads were all open to the traffic and were well trafficked.

44. Contractor did not operate any borrow pit and material were all provided by third parties from existing shared borrow pits and quarries. Therefore borrow pits reinstatement was not required from Contractor.

45. Contractor operated one camp at Poylu village. The camp was completely cleared and well reinstated during the audit. No issues or problems were recorded during the audit.

Figure 4: Camp site at Poylu village has completely removed and reinstated as was requested by land owner: Upper photos from construction period and below photos is current situation.

5. CONCLUSIONS

46. In general, environmental management were satisfactory during the construction period. The Contractor put efforts to manage the compliance issues according to the SSEMPs and the most of the previous non-compliances notices were solved.

47. During the reporting period the most important task for the Contractor was related to post-construction works (to demobilise all its equipment and ensure that the camp site was reinstated without any significant pollution incidents or accidents). No significant pollution events occurred during this stage of the project and completion of construction works.

48. Road safety signs were installed according to the project requirements.

49. The HSE team of the Contractor and Engineer addressed the issues and complaints of the residents. The Contractor undertook regular community consultations throughout the construction phase and satisfied complaints and requests of the communities.

50. The Contractor complied the environmental safeguard requirements. ADB and the Engineer provided technical support to the Contractor as needed and followed up on full accomplishment of post-construction environmental management and cleaning works by the Contractor including reinstatement of camp areas as per the findings of the post-construction inspections given in relevant section of this report.

51. All along the alignment, the Right of Way were smoothed, and compacted where necessary. The site was found to be clean and tidy, with no evidence of waste, equipment, or materials from the construction works.

52. The bridges sides were smoothed, and compacted where necessary. The site was found to be clean and tidy, with no evidence of waste, equipment, or materials from the construction works, apart from areas where the final works were ongoing.

53. The Contractor properly reinstated the site.

54. The camp was cleared to the satisfaction of the landowner prior to handover.

55. Those in the project area will soon no longer experience the construction-related environmental impacts.. It is expected that with the opening of these road, the project area will experience a general reduction in the environmental and social problems that were associated with the old bridges and road, and with the new infrastructure, economic development of the region is expected to accelerate.

56. Construction waste were cleaned after completion of works.

57. Table 10 below summarize the post-construction audit findings.

Table 10. Final Audit checklist.

No.	Activity	Impacts	Final Mitigation Measures	Check	Measures Implemented
1	Project site rehabilitation	Change of land cover, erosion resulting from the construction activities	Adequate forming and andscaping with drainage	✓	All RoW correctly formed and shaped. Drainage clear and operational
			Vegetation re-establishment	✓	Underway
3	Waste management	Waste accumulation, air and soil pollution	Collect and disposal all wastes including construction debris at designated location;	✓	Entire areas are clean and free of solid and liquid wastes.
6	Traffic management	Hazards and safety issues related to traffic	Public access and access to the housing, shops, business and public activities	✓	Local roads and crossings are all open. Almost all diversions and temporary access roads are removed/reinstated.
			Appropriate signage is installed	✓	All signage was installed
7	Road reinstatement	Road damages causing pollution, traffic disturbance and accidents	Streets with installed network reinstated to pre-construction or better conditions,	✓	All connecting roads/streets to bridges and also to village roads have been reinstated
8	Borrow sites and quarries	Land slide, soil erosion, change in riverbed and landscape, accidents	Borrow sites and quarries restored	N/A	Contractor did not operate any borrow pits or quarries. Materials were obtained from third parties
9	Existing Infrastructure facilities	Damage or disturbance to existing services (supply of electricity, water, gas, telecom etc.)	Reinstatement to pre-construction conditions or proper relocation, to be certified by the service companies	N/A	There wasn't any impact on existing facilities
10	Camp site facilities	Residual pollution and disturbance to the localities	All temporary facilities removed and cleaned up	✓	Camp site reinstated (even to better condition) as was required..
11	GRM	Unresolved complaints from Affected People	All grievances have been solved and AP's satisfied	✓	All grievances are satisfactorily resolved