Semi-Annual Environmental Monitoring Report

Project Number: 41116-043
Period: January 2018 to June 2018
Submission Date: 20 November 2018

IND: Jammu and Kashmir Urban Sector Development Investment Program – Tranche 3

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Loan Number: 3132 IND
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Submitted By:
Economic Reconstruction Agency, Government of Jammu and Kashmir

Contents:

1. INTRODUCTION

1.1. Overall Project Description:

1. The State of Jammu and Kashmir lies in the northernmost part of the country and shares international border with Pakistan and China. This physiographic situation attaches strategic importance to the region as well as the infrastructural development in the state. The state has three main geographical regions namely Jammu, Kashmir valley and highlands of Ladakh. As per details from Census 2011, Jammu and Kashmir has population of 1.25 Crores, an increase from figure of 1.01 Crore in 2001 census. The population forms 1.04% of India in 2011, compared to 0.99% in 2001. As per census 2011, the Sex Ratio of female is 889 per 1000 male, which is below national average of 940. While in 2001 the sex ratio of female was 900 per 1000 males. The literacy rate has seen an upward trend at 67.16% as per 2011 census as compared to the national literacy rate of 64.80%, while in 2001 literacy rate stood at 55.52%.

2. Jammu and Srinagar are the two major cities where majority of urban population is concentrated while other smaller towns share the rest. Urban infrastructure in these places for long has been neglected and hence, is subject to severe urban infrastructure problems. Although, at least, majority of population in Jammu and Srinagar cities have been provided with piped water supplies, the other urban amenities remain neglected. This is mainly due to meager investments made in the urban infrastructure either by private or by public sector.

3. The Government of Jammu and Kashmir (GoJK), apart from the ADB financed Multi-Sector Project for Infrastructure Rehabilitation (MPIR) in Jammu and Kashmir, again approached ADB for assistance in urban sector development for more development works and studies so as to implement comprehensively the urban sector reforms. The GoJK through Jammu and Kashmir Economic Reconstruction Agency has conceived the Jammu and Kashmir Urban Sector Development Investment Program (JKUSDIP) in its effort to boost economic growth in Jammu and Kashmir State. The primary objective of JKUSDIP is to promote economic development in Jammu and Kashmir State through expansion of basic services such as water supply, sewerage, sanitation, drainage, solid waste management, urban transport and other municipal functions in Jammu, Srinagar and other important urban centers of the State. JKUSDIP will also strengthen the service delivery capacity of the responsible state urban agencies and urban local bodies through management reforms, capacity building and training.

1.2. Project Objectives:

4. The proposed JKUSDIP will foster the economic growth in Jammu and Kashmir State. The long term Project objectives are to contribute to the economic development of Jammu and Kashmir through enhanced and sustainable growth in the main urban areas with emphasis on promoting commerce and on improvement of livelihood for the poor.

5. The urban sector sub-projects are aimed at expansion of basic services such as water

supply, sanitation, waste management, urban transport and other municipal functions in Jammu and Srinagar cities and other urban centers in order to cater to the demands and requirements of the increasing population. The overall program envisages the following broad benefits:

i. Improved water supply system
ii. Improved drainage waste management systems
iii. Improved road and traffic (urban transport) conditions
iv. Other municipal facilities.
v. Adequate Mechanized Parking.

1.3. Environmental Category:

6. The Project 3 (Tranche-3) under JKUSDIP was categorized as **Environmental Category "B"**, according to ADB's Safeguard Policy Statement (2009). All the subprojects under execution in Srinagar and Jammu have been categorized as Category "B".

1.4. Environmental Performance Indicators, if any:

7. For effective monitoring, selected environmental parameters have been identified as indicators which may be qualitatively and quantitatively measured and compared over a period of time in order to assess/ensure the compliance to environmental management plans (EMPs). The environmental performance indicators selected are physical, biological and social characteristics identified as most important in affecting the environment at critical locations all along the sub-project corridors. The parameters identified as performance indicators are:

i. Compliance with environmental management and monitoring plan.
ii. Compliance to State/National environmental regulations.
iii. Monitoring of ambient air quality, water quality and noise levels and comparison with baseline environmental quality and State/National standards.

1.5. Overall project progress, agreed milestones and implementation schedules:

8. In **Srinagar**, following three (3) subprojects are under execution:

i. Construction of Surface water Drainage System for Rawalpora-Chanapora area (Overall progress of the contract is about 96.70%)
ii. Providing and laying of Raw Water main from higher reaches of DoodhgangaNallah to Kralpora Treatment plant at Srinagar(Overall progress of the contract is about 80.50%)
iii. Construction of New Mehjoor Bridge at Jawahar Nagar (100% Completed)and Two Grade Separators in Srinagar city". (Overall progress of the contract is about 55.00%)

9. In **Jammu**, following four (4) sub-projects are completed or under execution

i. Rehabilitation of Water Supply Network in Identified Areas within Zone 2, 3, 4 and 5 in Jammu City. Contract Package No: JKUSDIP/Jammu/WS 05. (Overall progress of the contract is about 96%)

ii. Providing, Laying, Jointing, Testing and commissioning of Sewerage Network in Bakshi Nagar, Shakti Nagar, Shiv Nagar and Janipur Areas in Division A Phase II at Jammu. Contract Package No: JKUSDIP/WW/07. (Overall progress of the contract is about 99%).
iii. Multi-Level mechanized Parking at City Chowk Jammu (Overall progress of the contract is about 100%).
iv. Up gradation of Water Supply Network for reduction of Non-Revenue Water (NRW) in Zone-1 in Old City, Jammu (Overall progress of the contract is about 100%)

1.6. Any other information useful for assessing environmental performance of the project:

10. **Public consultation and grievance redressal:**

11. Public consultation has evolved as a useful tool in addressing the issues and rectification of the same wherever possible. The public consultation is the ongoing and continuous process, which is conducted on regular basis in Srinagar and Jammu subprojects under execution, with local residents to ensure that they are fully engaged in the project and have the opportunity to participate in its implementation. Formal consultations as well as adhoc regular discussions with the local residents both form part of the public consultation process.

12. Communication with the local residents is always open and views of the residents are taken into consideration during planning of the work programs under JKUSDIP so that the people suffer least disturbance and inconvenience as the work is executed.

13. Various issues were discussed during formal consultation which includes:-

a) Removal of surplus and waste material
b) Restoration of damaged water supply connection
c) Restoration of roads and lanes where execution of works involved.
d) Inconvenience with regard to access disruption
e) Safeguard measures like dust suppression actions
f) Worker and public safety measures at immediate construction sites.

14. Mitigation measures discussed during formal consultation includes:

i. Clearing passageways and roads of surplus waste material on priority
ii. Speedy restoration of all the utilities
iii. Simultaneous road restorations after execution of work
iv. Provision of alternate access routes till restoration is achieved
v. Using appropriate dust suppression measures and environmental monitoring.
vi. Frequent water sprinkling and removal of left over soil arising due to the excavation activities.
vii. Barricading of the site under construction to ensure safety of pedestrians etc

2. COMPLIANCE STATUS WITH NATIONAL /STATE /LOCAL STATUTORY ENVIRONMENTAL REQUIREMENTS

15. **Table-1:**Status of statutory environmental requirements is shown in the following table:

S #.	Name of Sub-project	Statutory Environmental Requirements	Status of Compliance	Actions Required
Srinagar				
1.	Construction of Surface water drainage system for Rawalpora-Chanapora area (Package: JKUSDIP Srinagar/SWD/02).	Environmental clearance under EIA Notification, 2006.	Not applicable	Contractor has applied for the renewal of Consent to Operate Stone Crusher and same is under Process with SPCBvide no NSTC/PCB29/2016-17 Dated 04/03/17 & vide no HRCC/ERA/DRC/RA/27/2018-19 Dated 17/07/18
		Approval for tree cutting	Not required	
		Consent to establish/operate for stone crusher.	. Consent No: 559 of 2016 Valid upto March 2017 (Fresh renewed consents of Stone crusher plant is in process of submission)	
		Consent to establish & operate Hot Mix Plant	Contractor submitted consent of HMM Plant. Consent No: 914 of 2016 Valid up to July 2019	
		Consent to establish & operate Batching Plant	Obtained and Submitted by Contractor. Submitted under consent no. 914 of 2016 and is valid up to July 2019	
		Consent to establish and operate DG Sets	Not in use during monitoring period	
		PUC certificates for contractor's vehicles.	Obtained and submitted by contractor	
2.	Providing and Laying of Raw water	Environmental clearance under	Not applicable	

	main from higher reaches of Doodhganga Stream to Kralpora Water Treatment Plant. (Package: JKUSDIP Srinagar/WS/02).	EIA Notification (MoEF), 2006.		
		Approval for tree cutting	Not required	
		Consent to establish/ operate Stone Crusher Plant from SPCB	Contractor has been procuring Stone Aggregate material from outsourced agency. Renewed consent to operate stone crusher plant has been submitted by the contractor under consent no. 304 of 2017 and is valid up to March 2018.	
		Consent to establish/ operate DG Set from SPCB (If required).	Not required during the present period	
		PUC certificates for contractor's vehicles.	Obtained and Submitted	
3.	Construction of New Mehjoor Bridge at Jawahar Nagar and Two Grade Separators in Srinagar city	Environmental clearance under EIA Notification, 2006.	Not Applicable	Mehjoor bridge Subproject Completed. Grade Separator is in progress.
		Approval for tree cutting	NOC (DS/Plan/2014-15/537-38) dated: 28.5.2015 obtained from Dept. of Sericulture for cutting 11 trees. All trees (11 no.) of Mulberry trees were and stand cleared.	
		Consent to establish/operate for stone crusher.	Stone Crusher Plant Fresh consents submitted having consent no. 601 of 2016 dated 22/09/2016 valid upto May 2019	
		Consent to establish/ operate Batching Plant	Batching Plant Consent to Operate: Consent No. of 138 RD/C of 2015 Dated: 28/07/2015 Valid for 2 years	

		Consent to establish & operate Hot Mix Plant	HMM Plant Consent to Operate: Consent No.1117 of 2015 Dated: 28/07/2015 Valid upto October 2016. Fresh consents submitted having consent no 956 of 2017 Dated 07/01/2017 valid till 07/01/2018	
		Consent to establish and operate DG Sets	DG Set (2 No's) Consent to Operate: Consent No. 136 RDK of 2015 Dated: 28-07-2015.	
		PUC certificates for contractor's vehicles.	Obtained and submitted by the Contractor.	
Jammu.				
4	Rehabilitation of Water Supply Network in Identified Areas within Zone 2, 3, 4 and 5 in Jammu City. Package No: JKUSDIP/Jammu/ WS-05	Approval for tree cutting	Cutting of Forest tree or any other schedule tree not required	
		Consent to establish and operate stone crusher.	Not required yet	
		PUC certificates for contractor's vehicles.	Obtained and submitted by the Contractor	
5.	Providing, Laying, Jointing, Testing and Commissioning of Sewerage network in Bakshi Nagar, Ranbir Collector, Janipur, Shiv Nagar and Shakti Nagar of division 'A' Phase-II at Jammu." (Balance works of WW-01 & WW-02). Package No. JKUSDIP/Jammu/WW-07.	Approval for tree cutting	Cutting of Forest tree or any other schedule tree not required.	
		Consent to establish and operate stone crusher.	Stone aggregate material is being procured from approved Stone Crusher Plant having following consent details; Consent to Operate:Consent No: 14 of 2016, Dated: 04/04/2016	

			Valid upto March 2017.	
		PUC certificates for contractor's vehicles.	Obtained and submitted by the Contractor	
6.	Mechanized Semi-Automatic Parking facility at Super Bazaar City Chowk Jammu. Package No.: JKUSDIP/Jammu /UT 02	Approval for tree cutting	Cutting of Forest tree or any other schedule tree not required	Subproject Completed
		Consent to establish and operate stone crusher	Not Required	
		Consent to establish and operate of concrete batching plant	Contractor has not established his own batching plant, but is obtaining material from the approved plant. The consent to operate certificate from utility owner obtained and submitted by Contractor. Batching plant Consent No: 721 of 2015 Dated: 11-07-2015 Valid upto: February, 2018.	
		Consent of DG Set	Contractor has already applied for the consents and case in under process.	
		PUC certificates for contractor's vehicles.	Obtained and submitted by the Contractor.	
7.	Upgradation of water supply network for reduction of Non-revenue water (NRW) in Zone 1 Old city Jammu	Approval for tree cutting	Cutting of Forest tree or any other schedule tree not required	Subproject Completed
		Consent to establish and operate stone crusher	Not Required	
		PUC certificates for contractor's vehicles.	Obtained and submitted by the Contractor.	

3. ComplianceStatus withthe Environmental Covenants as Stipulated In the Loan Agreement

16. **Table-2:**Status of compliance with environmental loan covenants of Tranche-3is presented below:

Loan Covenants	Compliance status
The Borrower shall ensure, or cause the EA to ensure that;	
the preparation, design, construction, implementation, operation and decommissioning of the project, and all subproject facilities comply with; (i)all applicable laws and regulations of the Borrower and the State relating to environment, health, safety; (ii) the Environmental Safeguards;(iii) EARF; and (iv) all measures and requirements set forth in the respective IEE and EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	Being complied with.
All bidding documents and contracts for Works contain provisions that require contractors to:- – Comply with the measures and requirements relevant to the contractor set forth in the IEE and EMP; and any corrective or preventive actions set out in a Safeguards Monitoring Report.	The bidding documents and contract agreements for work are incorporated with provisions set forth in the IEE and EMP and are being complied with.
– Make available a budget for all such environmental measures.	Environmental monitoring and mitigation costs allocated/ incorporated in contract agreements.
– Provide the EA with a written notice of any unanticipated environmental impacts that arise during construction, implementation or operation of the project that were not considered in the IEE and in the EMP.	Being complied with
– Adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction.	The existing condition of roads and other infrastructure has been recorded in the form of photographs and video recording as well.
– Fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	All the areas that if disturbed by construction activities will be cleared and restored to pre-project condition.
– Submitsemi-annual Safeguards Monitoring to ADBand disclose relevant information from such reports to affected persons promptly upon submission;	Semi-annual report prepared and submitted to ADB as per the guidelines.
– If any unanticipated environmental risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE and EMP as applicable, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and	In case of any unanticipated environmental risks and impacts arise during construction, implementation oroperation of the Project that were not considered in the IEE and EMP as applicable that shall be immediately informed to ADB with detailed description of the event and proposed corrective action plan.
– Report any breach of compliance with the measures and requirements set forth in the EMP, promptly after becoming aware of the breach.	Breach will be reported to ADB immediately after becoming aware of it.

4. COMPLIANCE STATUS WITH ENVIRONMENTAL MANAGEMENT AND MONITORING PLANS AS STIPULATED IN THE ENVIRONMENTAL DOCUMENTATION AS AGREED WITH ADB.

17. **Table-3:**The compliance status with environmental management and monitoring plan is shown in the following table:

S. No	Sub-project Name	EMP Part of Contract Documents (Yes/No)	EMP Being Implemented (Yes/No)	Status of EMP Implementation (Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfaction)	Actions Proposed/ Additional Corrective Measures Required
1.	Construction of Storm water drainage system for Rawalpora-Chanapora area (Package: JKUSDIP Srinagar/SWD/02).	Yes	Yes	Satisfactory	
2.	Providing and Laying of Raw water main from higher reaches of DoodhgangaNallah to Kralpora Water Treatment Plant. (Package: JKUSDIP Srinagar/ WS/02).	Yes	Yes	Satisfactory	
3.	Construction of New Mehjoor Bridge at Jawahar Nagar and Two Grade Separators in Srinagar city	Yes	Yes	Satisfactory	Mehjoor Project Completed. Grade Separator subproject is in progress.
			Jammu.		
4.	Rehabilitation of Water Supply Network in Identified Areas within Zone 2, 3, 4 and 5 in Jammu City. Package No.: JKUSDIP/Jammu/WS 05	Yes	Yes	Satisfactory	

5.	Providing, Laying, Jointing, Testing and Commissioning of Sewerage network in Bakshi Nagar, Ranbir Collector, Janipur, Shiv Nagar and Shakti Nagar of division 'A' Phase-II at Jammu." (Balance works of WW-01 & WW-02). Package No. JKUSDIP/Jammu/WW-07.	**No** (Separate EMP copy issued to the Contractor)	**Yes**	Satisfactory	
6.	Mechanized Semi-Automatic Parking facility at Super Bazaar City Chowk Jammu. Package No.: JKUSDIP/Jammu/UT 02	**Yes**	**Yes**	Satisfactory	**Subproject Completed.**
7.	Upgradation of water supply network for reduction of Non-revenue water (NRW) in Zone 1 Old city Jammu	**Yes**	**Yes**	Satisfactory	**Subproject Completed.**

18. Details of amount withheld from the IPC's for Non-compliance of various components of EMP, in accordance with ERA Circular No.: ERA/CEO/1038/ADM/9629-42, Dated: 10/01/2013, during the period January 2018 – June 2018.

19. **Table-4:** Updated status ofamount withheld from the IPC's for Non-compliance of EMP, Srinagar

S. No.	Contract Package	Bill No.	Total Recommended Deduction (In Rs)
Srinagar			
	No amount withheld from the IPC's during this period in Srinagar subprojects.	Nil	Nil
Jammu			
2	No amount withheld from the IPC's during this period in Jammu subprojects.	Nil	Nil

5. APPROACH AND METHODOLOGY ENGAGED FOR ENVIRONMENTAL MONITORING OF THE PROJECT

20. Construction works of 3 subprojects are under execution in Srinagar and 2 subprojects in Jammu. 2 subproject stands completed in Jammu. Monitoring schedules and reporting formats already stands issued to each contractor for compliance and implementation of EMP of each site. The contracting firms of all subprojects have nominated/ mobilized Environmental Safety Officers and are submitting site environmental reports at the end of each month.

21. Site visit/ inspections are being carried out on regular basis to assess the EMP implementation of Tranche-3 subprojects under execution.

22. Public consultation was conducted for the subprojects in both under execution projects. During consultation with different stakeholders, issue of "dust generation" was addressed. They have also suggested measures apart from regular water sprinkling by way of water tankers like "frequent mopping and removal of the left-over soil produced from excavation activities" must be implemented. Since, ongoing works have a limited construction period and hence have only temporary and short-term impact within the impact corridor. Contracting firms are being instructed for strict follow-up of mitigation measures as devised in EMP of Contract Agreement.

23. Public consultation is a regular process throughout the construction and operation phases of the subprojects to solve any issues arising out of the ongoing works.

24. The safeguards staff conducts frequent site visits to monitor the implementation of safeguard measures on sites and report to concerned official about issues/problems related to environmental non-compliance. Necessary directions in the form of corrective action

measures, in case of non-compliances, are being issued to the contractors on the site and through letters about the procedures to resolve problems/issues or requirements.

6. MONITORING OF ENVIRONMENTAL RECEPTORS/ ATTRIBUTES

1.7. Monitoring basis

25. Air quality, water quality and noise levels are required to be monitored to check if any adverse impact is being caused by the construction activities. The monitoring of these variables is to be carried out in construction areas at sensitive locations within 100m impact zone of the subproject. The monitoring of environmental variables is to be carried out as per the agreed Environmental Monitoring Plan.

1.8. Type of environmental receptor/attribute monitored(for eachtype)

26. The environmental attributes monitored include the air, noise and water quality parametersat the construction sites in sub-project corridors. The air quality parameters monitored include RSPM (PM_{10}), RSPM ($PM_{2.5}$), SO_2 and NO_2. The water quality parameters include temperature, pH, electrical conductivity (EC), dissolved oxygen (DO), biochemical oxygen demand (BOD_5), chemical oxygen demand (COD), total suspended solids (TSS), total dissolved solids (TDS), turbidity (NTU), total alkalinity, total hardness, calcium hardness and magnesium hardness. In case of noise quality,the day time dBL_{eq}values are monitored.

1.9. Methodology, Regulatory Standards of monitoring and equipment'sadopted forEnvironmental Monitoring Laboratory (EML):

27. The following standard methods and equipment'sarebeing used for monitoring.

28. **Table-5:** List of Assessment Methodology, Acceptable Standards and equipment's adopted.

S #.	Parameters	Assessment Methodology	[1]Acceptable Standards	Cause for rejection	Equipment's in Use
A.	**Ambient Air Quality ([2]NAAQ Standards, 2009)- Time weighted average**				
1.	*RSPM– particulate matter PM_{10}*	GravimetricHigh Volume Sampler method (attached with cyclone).	100 *µg/m³* 60 *µg/m³*		Respirable Dust Sampler, Envirotech -APM 460 BL Digital Balance, Schimadzu – BL-220H
2	*Fine particulate matter* $PM_{2.5}$,	Gravimetric method.	60 *µg/m³* 40 *µg/m³*		Ambient Fine Dust Sampler, Instrumex.

[1]CPHEEO Manual, MoUD, GOI, May 1999; and MoEF, Act and Rules, 1986 & Amendments 2000

[2] National Ambient Air Quality Standards (NAAQS)

3.	SO_2	Modified West and Gaeke Method.	80 $\mu g/m^3$		
4.	NO_2	Modified Jacob &HochheiserMethod.	80 $\mu g/m^3$		High Volume Air Sampler, Envirotech –APM 460BL. Thermo-electrically cooled gaseous sampling attachment, Envirotech – APM 411TEDigital Spectrophotometer, EI-305.
B.	[3]**Ambient Noise Level**				
1.	*Residential Area*	Direct Reading in Decibel Sound Level Meter.	*55dB(A) L_{eq} (Day time)*		Digital Sound Level Meter, AZ-8928
2.	*Commercial Area*	Direct Reading in Decibel Sound Level Meter.	*65 dB(A) L_{eq} (Day time))*		Digital Sound Level Meter, AZ-8928
C.	[4]**Ambient Water Quality *(For Drinking / Ground Water)***				
1.	*Temp (in ºC)*	Digital/Mercury Thermometer Method.	>20 *ºC*		Digital/Mercury Thermometer
2.	*Color (Hazen units)*	Hazen Method	5 Platinum cobalt scale	25	-
3.	*Taste and Odour*		Unobjectionable	Objectionable	-
4.	*pH value*	Electrometric Method.	6.5-8.5	>8.5	Digital pH Meter, HANNA – HI98127,
5.	*Electrical Conductivity (EC)* µs/cm	Electrometric Method.	≤ 500 µs/cm	1000 µs/cm	Digital TDS/EC Meter, HANNA – HI-96311
6.	*Dissolved Oxygen (DO) mg/l*	Winkler's Method Using AzideModification	> 6 mg/l		Winkler's Method
7.	*Total Suspended Solids (TSS) mg/l*	Gravimetric (Filtration and Drying at 105°C)	<120 mg/L		Hot Air Oven, Digital Balance, Schimadzu-BL-220H
8.	*Total Dissolved Solids (TDS)*	Digital Meter Method.	≤ 500 mg/l	2000 mg/l	BOD Incubator

[3] Standards specified in the schedule of Noise Pollution (Regulation And Control) Rules, 2000 of Government of IndiaThe Principal Rules were published in the Gazette of India, vide S.O. 123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E), dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment (Protection) Act, 1986.

[4] Drinking water Specifications, IS-10500

	mg/l				
9.	*Turbidity (NTU)*	Nephelo Turbidity Method.	1mg/l	10 mg/l	Nephelo Turbidity Meter, Systronics – 132
10.	*Total Hardness (as $CaCO_3$) mg/l*	EDTA Titrimetric	300 mg/l	600 mg/l	-
11.	*Total Alkalinity (as $CaCO_3$) mg/l*	Titrimetric (Methyl Orange)	200 mg/l	600 mg/l	-
12.	*Calcium Hardness (Ca) mg/l*	EDTA Titrimetric	75 mg/l	200 mg/l	-
13.	Magnesium Hardness *(Mg) mg/l*	Calculation from total Hardness and Calcium	30 mg/l	150 mg/l	-
D.	**[5]Waste Water Quality (Storm/ drain water, dry weather flow)**				
1.	*Temp (in ºC)*	Digital/Mercury Thermometer Method.	Shall notexceed 5ºCabove thereceivingwater temperature		Digital/Mercury Thermometer
2.	*Color (Hazen units)* Platinum cobalt scale	-	5	25	-
3.	*Odour*	Objectionable/ Non-objectionable	Non-objectionable		-
4.	*pH value*	Electrometric Method.	5.5-9.2		Digital pH Meter, HANNA – HI98127,
5.	*Electrical Conductivity (EC)* µs/cm	Electrometric Method.	< 2000		Digital TDS/EC Meter, HANNA – HI-96311
6.	*Dissolved Oxygen (DO) mg/l*	Winkler's Method Using Azide Modification	> 6 mg/L		Winkler's Method
7.	*Biochemical Oxygen Demand (BOD_5) mg/l*	Five Days BOD as per APHA 2005	30 mg/l		BOD Incubator
8.	*Chemical Oxygen Demand (COD) m/l*	Dichromate Method (APHA 2005)	250 mg/l		
9.	*Total Dissolved Solids (TDS) mg/l*	Digital Meter Method.	≤500 mg/L	2100 mg/L	Digital TDS/EC Meter, HANNA – HI-96311
10.	*Total*	Gravimetric	<120 mg/L		Hot Air Oven,

[5] Standards for Discharge of Environmental Pollutants, IS-10500

	Suspended Solids (TSS) mg/l	(Filtration and Drying at 105°C)			Digital Balance, Schimadzu-BL-220H
11.	*Turbidity (NTU)*	Nephelo Turbidity Method.	5 mg/L	10 mg/L	Nephelo Turbidity Meter, Systronics – 132
12.	*Total Alkalinity (as $CaCO_3$) mg/l*	Titrimetric (Methyl Orange)	200	600	

Annotation:*BOD= biochemical oxygen demand; DO= dissolved oxygen; EC= electrical conductivity; NO_2= nitrogen dioxide; PM_{10}= particulate matter with particle size less than 10µ; RSPM= respirable suspended particulate matter; SO_2=Sulphur dioxide; TDS= total dissolved solids; TSS= total suspended solids.*

1.10. Monitoring results and comparison with statutory requirements at National levels.

29. The environmental monitoring for air quality, water quality and noise levels for subprojects under Tranche-3 in Srinagar was conducted during Q2 period of 2018. However, due to the discontinuation of PMC services in September 2017, regular functioning of Environmental Monitoring of Lab and thereby scheduled monitoring was hindered in Jammu. The previous staff of the Lab is being mobilized for some time to conduct the monitoring. The data so generated will be send ADB.

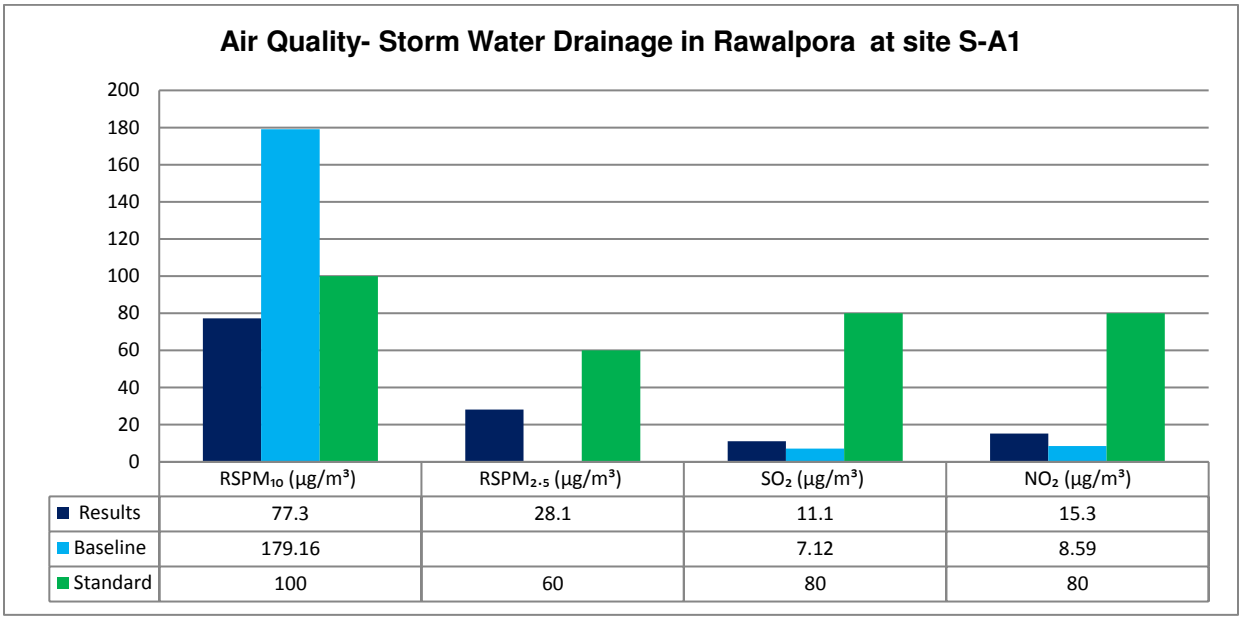
A. Air Quality

30. **Table-6: Construction of Storm Water Drainage in Rawalpora area Chanapora Bridge, Srinagar**

Srinagar Subprojects								
Ambient Air Quality- Construction of Storm Water Drainage in Rawalpora Area								
Site Code	**Quarter**	**Month of Sampling with date**	**Sampling Site/ Location**	**Site Type**	**RSPM$_{10}$ (µg/m^3)**	**RSPM$_{2.5}$ (µg/m^3)**	**SO_2 (µg/m^3)**	**NO_2 (µg/m^3)**
					Permissible Limits/ Standards			
					100	**60**	**80**	**80**
S-A1	Baseline monitoring	January 30-01-2013	Rawalpora Area	Residential Area	179.16	-	7.12	8.59
	Q2	28 -05-2018	Rawalpora near construction area	Residential area	77.3	28.1	11.1	15.3

31. Q2 monitoring of Air Quality was conducted at sampling location S-A1 in Rawalpora area.Air quality monitoring results showPM_{10}&$PM_{2.5}$parameterswell within the permissible limits as specified in NAAQ standards. Similarly, results of oxides of nitrogen and sulphur are within the permissible limits.

32. Comparative analysis of site S-A1 with NAAQ standards and baseline monitoring is illustrated in Figure 1 below:

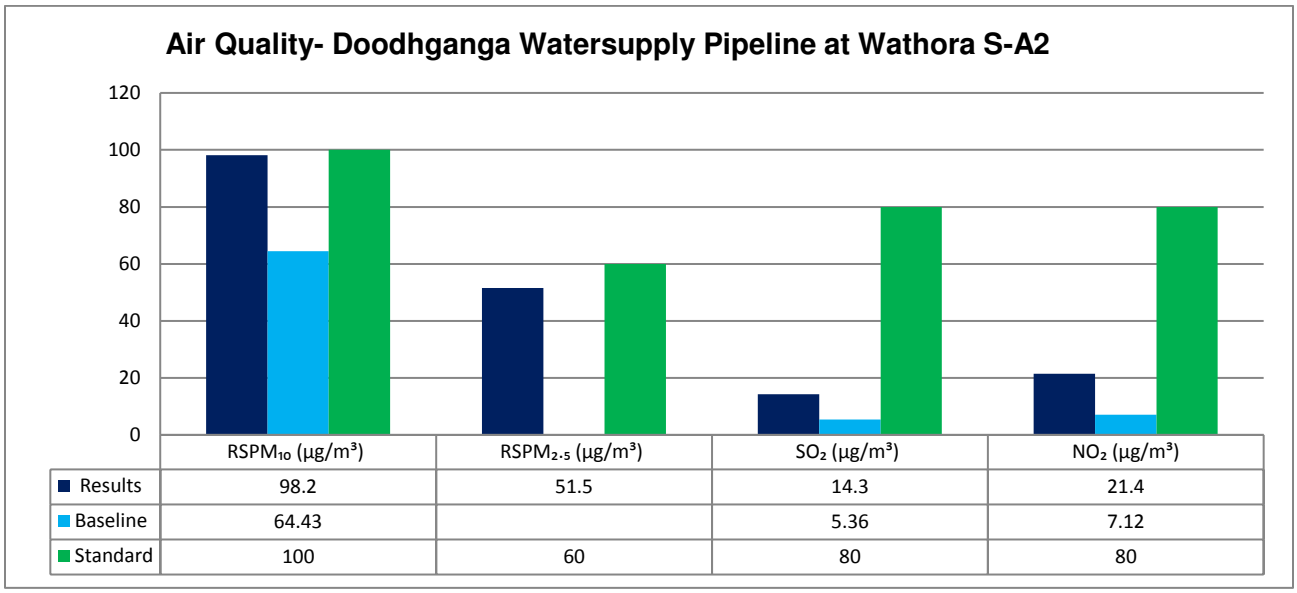


33. **Table- 7: Construction & Laying of WS Pipeline from Doodhganga to Kralpora WTP.**

	Srinagar Subprojects							
	Ambient Air Quality: Laying of WS Pipeline from Doodhganga to Kralpora WTP							
Site Code	**Quarter**	**Month of Sampling with date**	**Sampling Site/ Location**	**Site Type**	**$RSPM_{10}$ (µg/m³)**	**$RSPM_{2.5}$ (µg/m³)**	**SO_2 (µg/m³)**	**NO_2 (µg/m³)**
						Permissible Limits/ Standards		
					100		**80**	**80**
	Baseline Monitoring (Pre-Construction)	December 23/12/2014	Near Nowhara bridge at Source	Residential area	64.43	-	5.36	7.12
S-A2	Q2	30-06-2018	Near Wathora	Residential area	98.2	51.5	14.3	21.4

34. Q2 monitoring of Air Quality was conducted at sampling location S-A1 near Wathora. From the air quality monitoring results it is revealed that all the ambient air quality parameters (SO2, NO2 and PM 10 & 2.5) were well within the permissible limits.

35. Comparative analysis of site S-A2 with NAAQ standards and baseline monitoring is illustrated in Figure 2below:

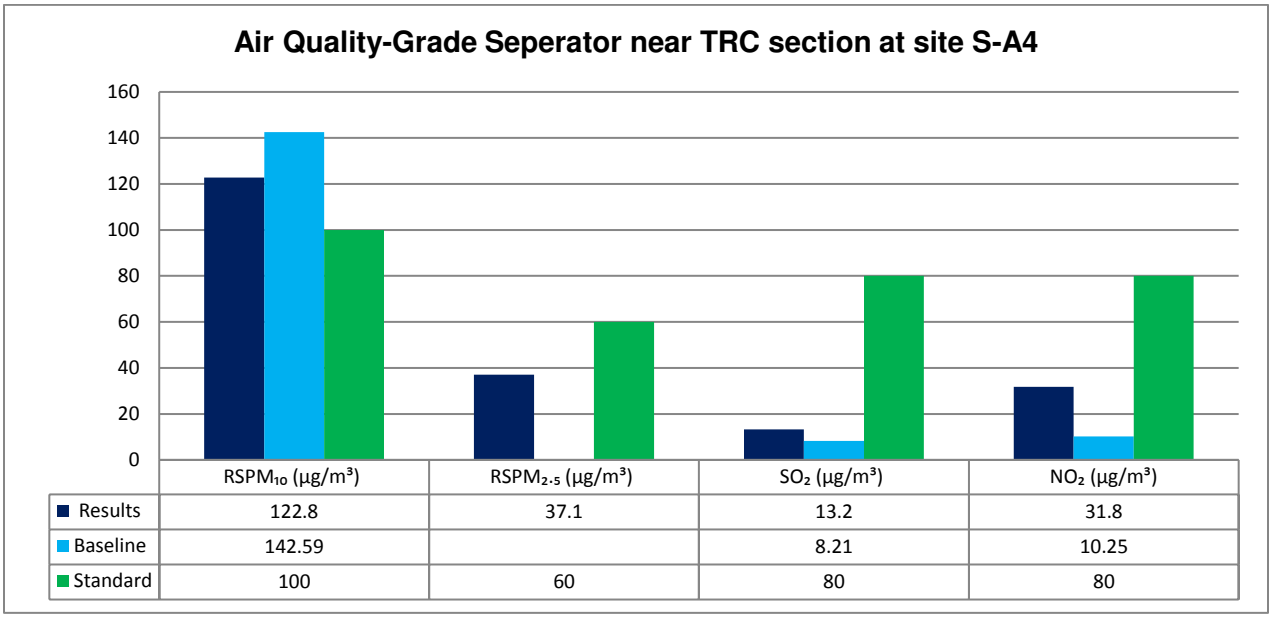


36. **Table-8: Construction of New Mehjoor Bridge and Grade Separator in Srinagar City**.

Srinagar Subprojects								
Ambient Air Quality: Construction of New Mehjoor Bridge and Grade Separators.								
Site Code	**Quarter**	**Month of Sampling with date**	**Sampling Site/ Location**	**Site Type**	**RSPM$_{10}$ (µg/m^3)**	**RSPM$_{2.5}$ (µg/m^3)**	**SO$_2$ (µg/m^3)**	**NO$_2$ (µg/m^3)**
					Permissible Limits/ Standards			
					100	**60**	**80**	**80**
S-A3	Baseline Monitoring	July 2013	Near Bridge Site	Residential area	87.23	-	4.22	5.79
	Q1 & Q2	*	Near Mehjoor Bridge site	Residential area				
S-A4	Baseline Monitoring	September 2013	Near Emporium Side/ TRC	Commercial Area	142.59	-	8.21	10.25
	Q2	24 -04-2018	Near Emporium Side	Commercial Area	122.8	37.1	13.2	31.8

37. From the air quality monitoring results it is revealed that the oxide pollutants (SO2 & NO2) and PM (2.5) are within the permissible limits, however the PM (10) show slightly higher value than the permissible limit resulting mainly due to the construction related activities at the site and partly due to the vehicular movement.At the site material transportation, shutteringetc were the major activities in progress.The site witnessed moderate traffic movement throughout the day.

38. Comparative analysis of site S-A4 with NAAQ standards and baseline monitoring is illustrated in Figure 3 below:



B. Noise Quality

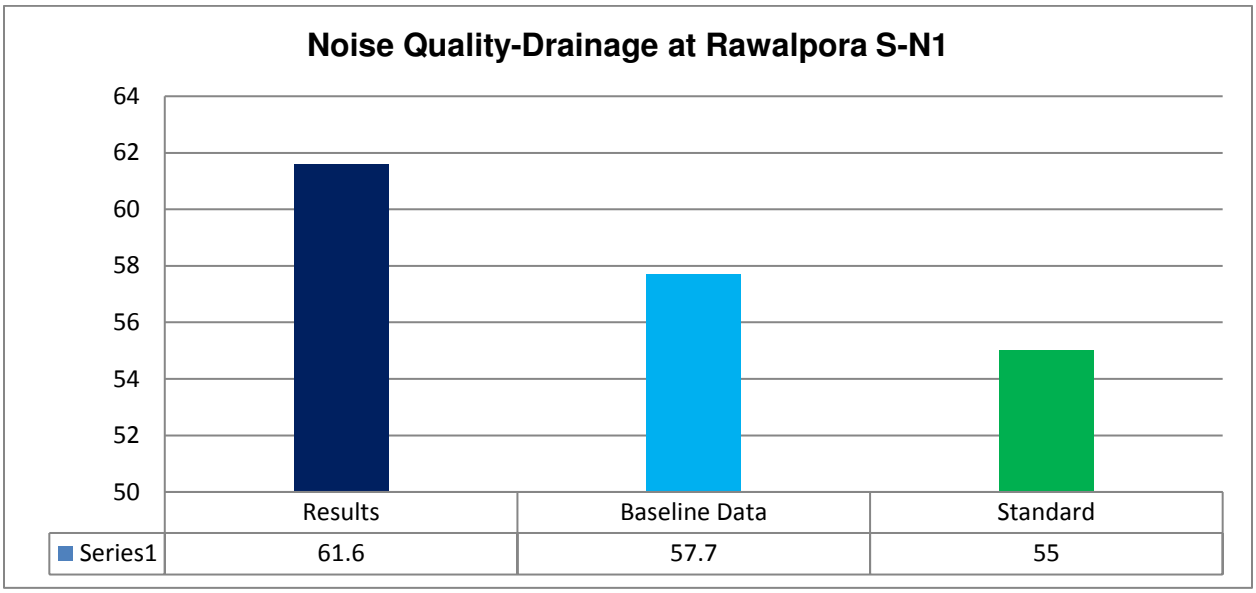
38. The measured noise quality data at various locations in Srinagar and Jammu is given below:

39. **Table 9: Construction of Storm Water Drainage System in Rawalpora Area to Chanapora Bridge Srinagar City**

Srinagar Subprojects						
Site Code	**Quarter**	**Month of Sampling with date**	**Sampling Site/ Location**	**Site Type**	***Day Time Noise Levels dB (A) Leq***	***Day Time Noise Quality Standards dB (A) Leq***
Construction of Storm Water Drainage System in Rawalpora Area to Chanapora Bridge Srinagar City						
S-N1	Baseline	January 08-01-2015	Near Rawalpora Area	Residential	*57.7*	*55*
	Q2	28-05-2018	Rawalpora Area	Residential	*61.6*	*55*

40. Noise quality monitoring shows increase at site S-N1 and just overlapping the NAAQS as well baseline characteristic's, which is mainly attributed to frequent traffic movement and due to the ongoing construction activity in main road which can't be ruled out. However, contractor was instructed for proper maintenance of vehicles and application of mitigation measures so to avoid noise pollution. Comparative analysis of S-N1 is illustrated in Figure 9 below;

41. Comparative analysis of site S-N1 with NAAQ standards and baseline monitoring is illustrated in Figure 4 below:

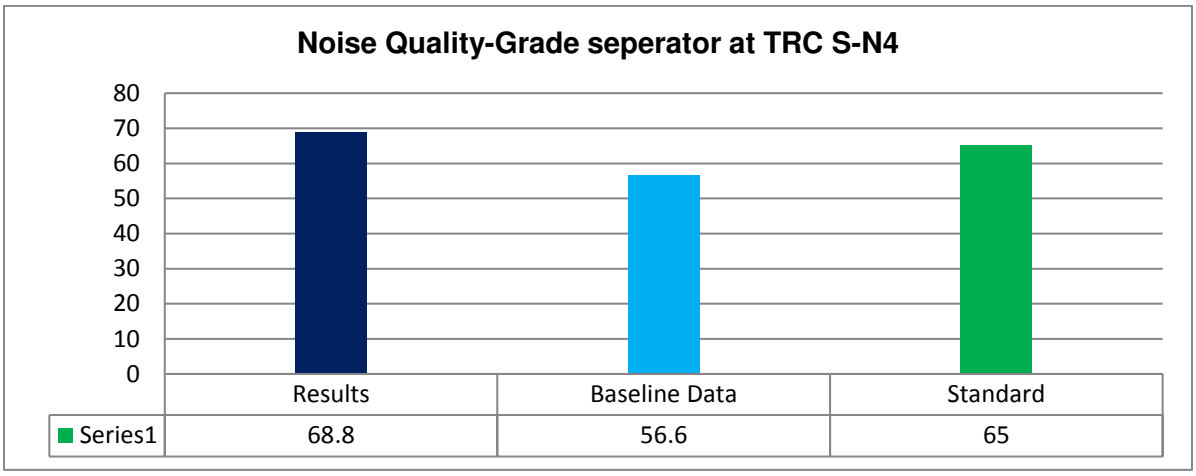


42. **Table-10: Construction of New Mehjoor Bridge and 2 Grade Separators in Srinagar City.**

Srinagar Subprojects						
Site Code	**Quarter**	**Month of Sampling with date**	**Sampling Site/ Location**	**Site Type**	***Day Time Noise Levels dB (A) Leq***	***Day Time Noise Quality Standards dB (A) L_{eq}***
Construction of New Mehjoor Bridge and 2 Grade Separators in Srinagar City						
S-N3	Baseline Monitoring	July 06/07/2013	Near New Mehjoor Bridge	Residential area	*56.6*	*55*
			Near New Mehjoor Bridge	Residential		
S-N4	Baseline Monitoring	July 06/07/2013	Near Emporium Side, TRC	Commercial area	*56.6*	*65*
	Q2	24 -04-2018	Near Emporium Side, TRC	Commercial Area	*68.8*	*65*

43. From the noise quality monitoring it is revealed that the noise Leq observed is higher than the permissible limit which is mostly due to ongoing construction related activities which involves heavy machinery and partly due to the traffic movement and other local activities going on simultaneously at the site.

44. Comparative analysis of site S-N4 with NAAQ standards and baseline monitoring is illustrated in Figure 5 below:

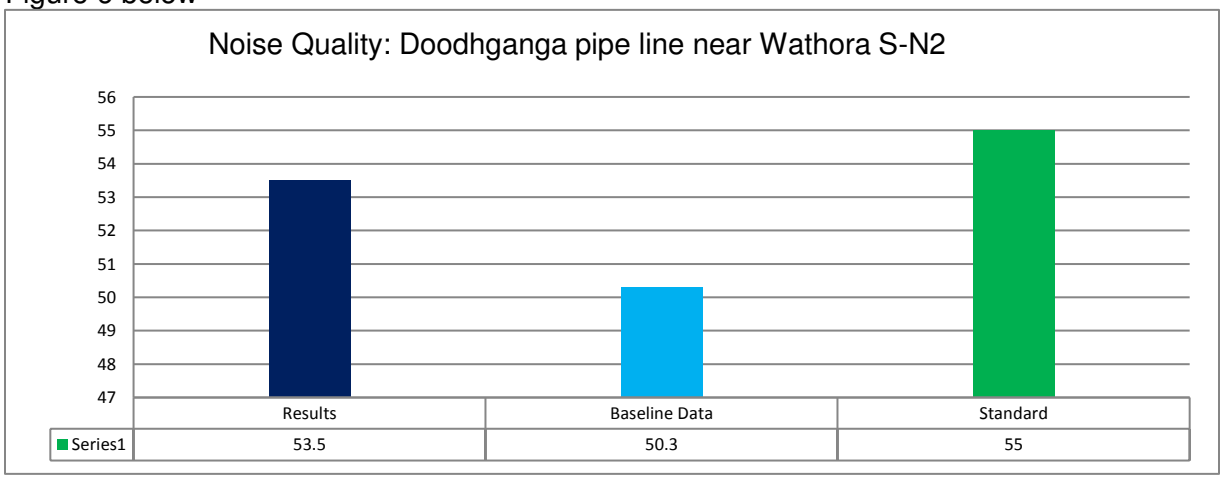


45. **Table 11-: Construction & Laying of WS Pipeline from Doodhganga to Kralpora WTP.**

Srinagar Subprojects						
Site Code	**Quarter**	**Month of Sampling with date**	**Sampling Site/ Location**	**Site Type**	***Day Time Noise Levels dB (A) Leq***	***Day Time Noise Quality Standards dB (A) L_{eq}***
Construction of New Mehjoor Bridge and 2 Grade Separators in Srinagar City						
S-N2	Baseline Monitoring	July 06/07/2013	Near Nowhara bridge at Source	Residential area	*50.3*	*55*
	Q2	30-06-2018	Near Wathora	Residential area	*53.5*	*55*

46. From the noise quality monitoring it is revealed that the noise Leq observed is within the permissible limit.

47. Comparative analysis of site S-N2 with NAAQ standards and baseline monitoring is illustrated in Figure 6 below



C.Water Quality

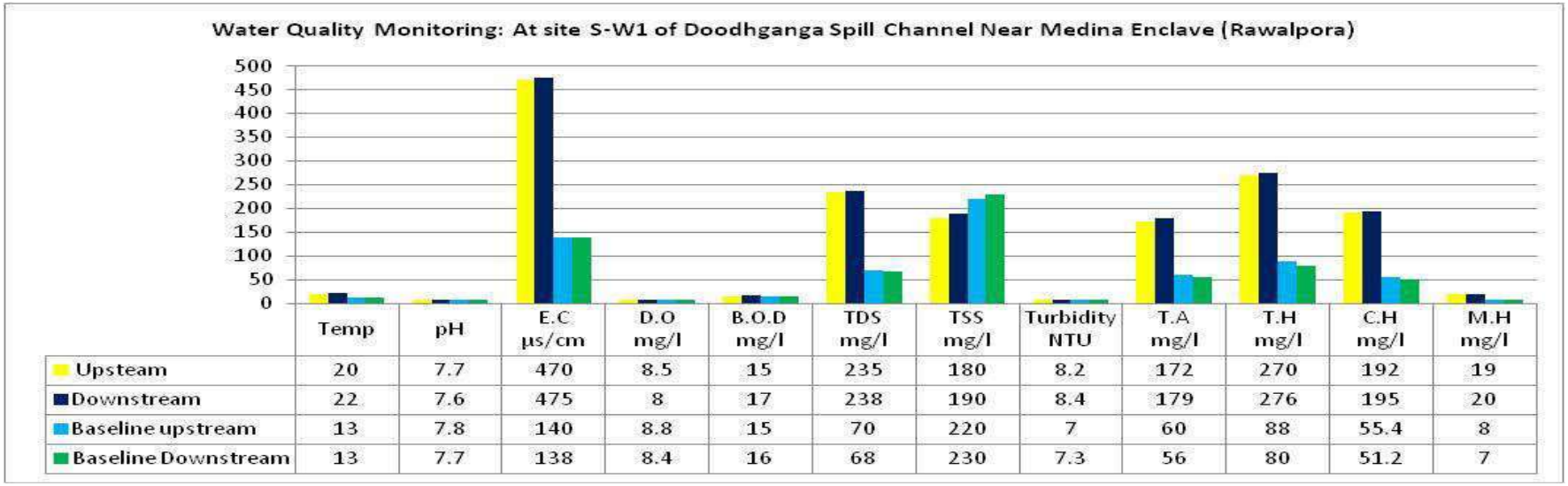
48. The results of water quality analysis conducted at sites in Srinagar are presented below:

49. **Table-12: Construction of Construction of Storm Water Drainage system for Rawalpora-Channapora**

Site Code	Quarter	Month of Sampling with date	Sampling Site	Location	Temp ºC	pH	E.C µs/cm	D.O mg/l	B.O.D mg/l	TDS mg/l	TSS mg/l	Turbidity NTU	T.A	T.H	C. H	M.H
					Permissible Limits											
					-	*6.5-8.5*	*≤500*	*>6*	*5*	*≤500*	*≤120*	*5-10*	*200 - 600*	*300 - 600*	*75-200*	*30-75*
S-W1	Baseline (DoodhgangaNallah)	Jan-Apr 2013	DoodhgangaNallah near Channpora Bridge	Upstream	10.8	7	212	8.0	5.2	108	100	17.2	The above 4 parameters were not part of the baseline monitoring. These additional parameters included into monitoring in November, 2013			
				Downstream	10.9	7	223	7.6	4.8	100	104	21.4				
	Baseline (Pre-Construction)	June 22.06.2015	Doodhganga Spill Channel near Rawalpora Area	Upstream	13	7.8	140	8.8	15	70	220	7	60	88	55.4	8
				Downstream	13	7.7	138	8.4	16	68	230	7.3	56	80	51.2	7
	Q2 (April-June 2018)	May 28-05-2018	Doodhganga Flood spill channel near Medina Enclave	Upstream	20	7.7	470	8.5	15	235	180	8.2	172	270	192	19
				Downstream	22	7.6	475	8.0	17	238	190	8.4	179	276	195	20

Annotations: TA- Total Alkalinity; TH- Total Hardness; CH- Calcium Hardness; MH-Magnesium Hardness

50. Water quality sampling was conducted in May 2018 for Doodhganga flood spill channel which is flowing through the Rawalpora area and is in proximity of ongoing works of Storm Water Drainage. The flow regime of the flood spill channel was moderate. Algal (Chlorophyta and Bacillariophyta type) growth was also observed along with suspended matter was present in good quantity. DO of the spill channel was found in optimum amount due to the availability of direct sunlight, presence of algal growth and flow regime. TSS and BOD parameter of the Doodhganga Flood Spill channel is high and due to the presence of high organic load. Conductivity and TDS values were found in normal range. Turbidity was observed within the range. Alkalinity and Hardness were on lower sides. Physio-chemical characteristics of the most parameters are within the permissible levels and in line with baseline characteristics. The higher BOD and TSS values is mainly attributed to number of storm and waste water disposal (both point and non-point source) into spill channel. Comparative analysis of the DoodhgangaFloodspill Channel is illustrated in Figure 10 below;



	Temp	pH	E.C µs/cm	D.O mg/l	B.O.D mg/l	TDS mg/l	TSS mg/l	Turbidity NTU	T.A mg/l	T.H mg/l	C.H mg/l	M.H mg/l
Upsteam	20	7.7	470	8.5	15	235	180	8.2	172	270	192	19
Downstream	22	7.6	475	8	17	238	190	8.4	179	276	195	20
Baseline upstream	13	7.8	140	8.8	15	70	220	7	60	88	55.4	8
Baseline Downstream	13	7.7	138	8.4	16	68	230	7.3	56	80	51.2	7

Figure 7: Water quality characteristics of Doodhganga Flood Spill Channel during Q2 period in May 2018 near Medina Enclave Rawalpora S-W1, Srinagar

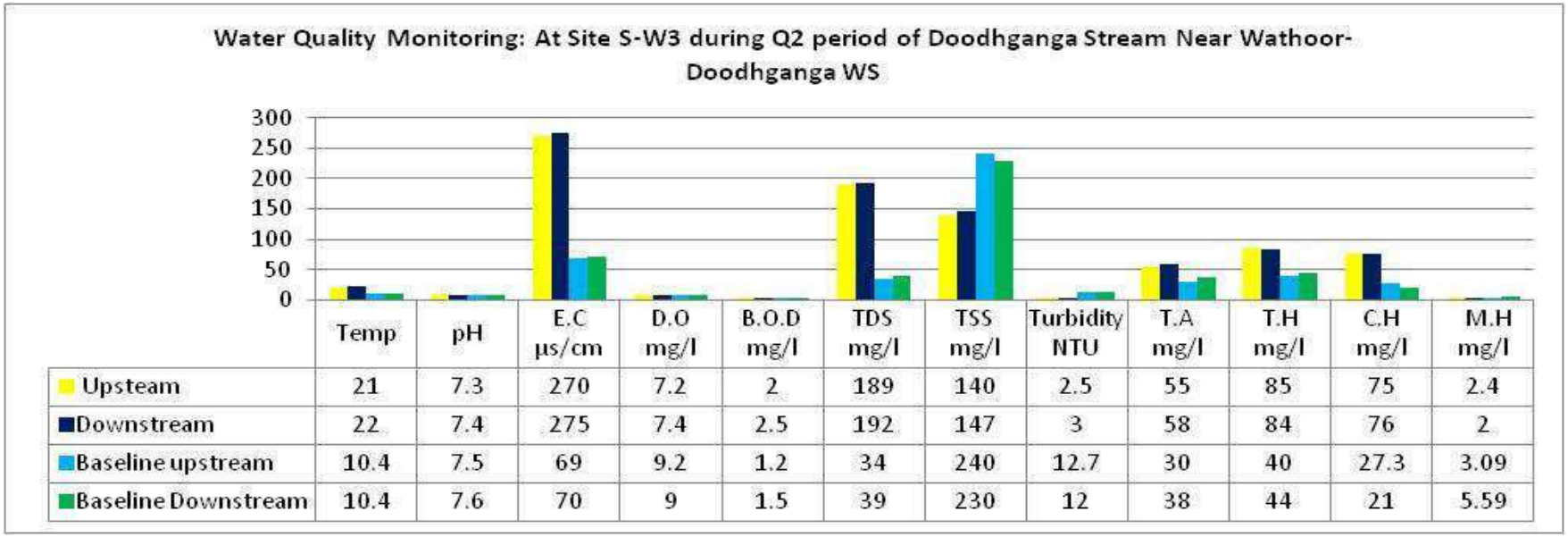
51. **Table-13: Laying of Raw WS Pipeline from higher reaches of Doodhganga to WTP Kralpora Srinagar**

Site Code	Quarter	Month of Sampling with date	Sampling Site	Location	Temp ºC	pH	E.C µs/cm	D.O mg/l	B.O.D mg/l	TDS mg/l	TSS mg/l	Turbidity NTU	T.A	T.H	C. H	M.H
					Permissible Limits											
					-	*6.5-8.5*	*≤500*	*>6*	*5*	*≤500*	*≤120*	*5-10*	*200 - 600*	*300 - 600*	*75-200*	*30-75*
S-W3	Baseline (Pre-Construction)	June 27.06.2014	Doodhganga Stream near Nawhara Tapping Point	Upstream	10.4	7.5	69	9.2	1.2	34	240	12.7	30	40	27.3	3.09
				Downstream	10.4	7.6	70	9	1.5	39	230	12	38	44	21	5.59
	Q2 (Apr-Jun 2018)	June 30-06-2018	Doodhganga near Wathoor	Upstream	21	7.3	270	7.2	2.0	189	140	2.5	55	85	75	2.4
				Downstream	22	7.4	275	7.4	2.5	192	147	3.0	58	84	76	2.0

52. During Q2 period of monitoring in June 2018, the water samples were collected from the Doodhganga stream near Wathoorbridge. Moderate flow was recorded during the sampling period and colourless in appearance. BOD values were exceptionally on lower

sideand following the permissible limits and baseline characteristics. Dissolved Oxygen was recorded at a maximum of 7.4 mg/l. However, TSS was marginally on higher side attributed to the turbulent flow of water which brings sediments from the upper reaches. Alkalinity and Hardness were observed on lower side.

53. The present study revealed that Dissolved Oxygen of the concerned stream was found to be healthy due to the moderate flow of the water. BOD was found to be in permissible limits. Conductivity, TDS, and pH were well within permissible limits. . Comparative analysis of the Doodhganga stream is illustrated in Figure 11 below;



	Temp	pH	E.C µs/cm	D.O mg/l	B.O.D mg/l	TDS mg/l	TSS mg/l	Turbidity NTU	T.A mg/l	T.H mg/l	C.H mg/l	M.H mg/l
Upsteam	21	7.3	270	7.2	2	189	140	2.5	55	85	75	2.4
Downstream	22	7.4	275	7.4	2.5	192	147	3	58	84	76	2
Baseline upstream	10.4	7.5	69	9.2	1.2	34	240	12.7	30	40	27.3	3.09
Baseline Downstream	10.4	7.6	70	9	1.5	39	230	12	38	44	21	5.59

Figure 08: Water quality characteristics of Doodhganga Stream - At Site S-W3 of Doodhganga Water Supply Subproject

54. **Table-14: Construction of Grade Separator in Srinagar City.**

WATER QUALITY DATA																
Site Code	Quarter	Month of Sampling with date	Sampling Site	Location	Temp ºC	pH	E.C µs/cm	D.O mg/l	B.O.D mg/l	TDS mg/l	TSS mg/l	Turbidity NTU	T.A	T.H	C. H	M.H
					Permissible Limits											
					-	*6.5-8.5*	*≤500*	*>6*	*5*	*≤500*	*≤120*	*5-10*	*200-600*	*300-600*	*75-200*	*30-75*
				Downstream	24	7.4	760	2.2	30	380	205	22	280	230	185	11.0
Grade Separator At TRC/ Radio Kashmir Crossing																
S-W7	Baseline Monitoring	July 06-07-2013	Jhelum River Near Zero Bridge	Upstream	19	8.0	260	7.0	2.0	158	136	2.1	The above 4 parameters were not part of the baseline monitoring. These additional parameters included into monitoring from March 2016			
				Downstream	20	8.0	267	6.6	2.0	160	140	2.2				
	Q2 (Apr-Jun 2018)	April 24-04-2018	Jhelum River Near Radio Kashmir	Upstream	21	7.5	220	7.6	1.5	110	130	2.5	90	120	113	1.7
				Downstream	22	7.6	230	7.4	1.8	115	141	2.6	96	124	116	1.9

55. During Q2 period, water quality monitoring was conducted at S-W7 site and water samples were collected from the upstream and downstream of River Jhelum near Abdullah Bridge. Flow regime was normal during this period.The water in the stream was found to be clear and odourless.Water quality results were in healthy state as most of the parameters were within the standards. TSS was moderately on higher side due to the suspended substances which the river brings along its course and effect of erosion/ edge effect. DO was also observed at optimum level due to the flow regime and volume of water.Total Alkalinity and Hardness were recorded on the lower sides. Comparative analysis of the River Jhelum is illustrated in Figure 12 below;

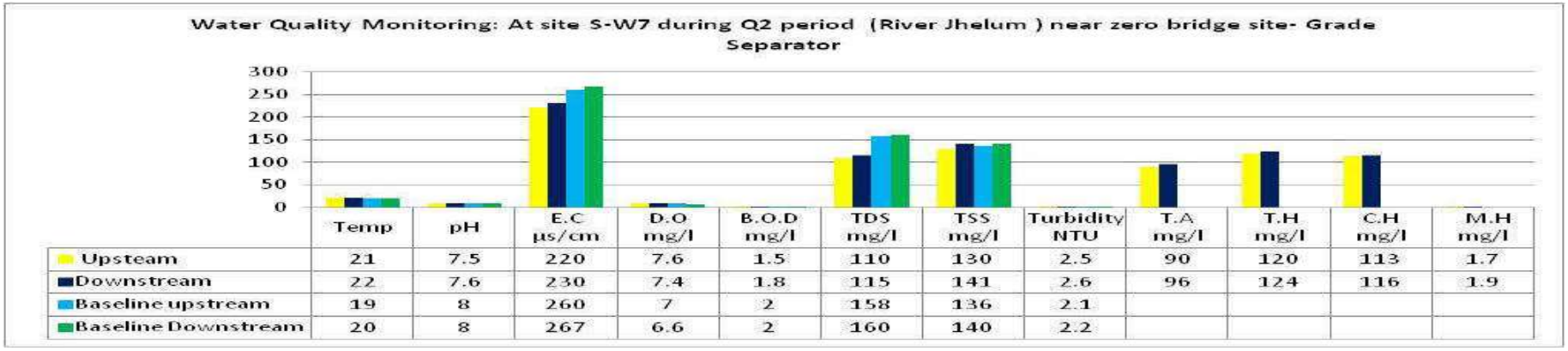


Figure 09: Water quality characteristics during Q2 period in April 2018of River Jhelum at Zero Bridge (S-W7) near Grade Separator site.

7. ANY OTHER ENVIRONMENTAL ASPECTS, IMPACTS OBSERVED DURING IMPLEMENTATION WHICH WERE NOT COVERED EARLIER

56. During this reporting period no such impact was envisaged.

8. DETAILS OF COMPLAINTS RECEIVED FROM PUBLIC AND ACTIONS TAKEN THEREOF TO RESOLVE

57. No complaints received during the reporting period.

9. FOLLOW-UP ACTIONS AND CONCLUSIONS

58. Since environmental monitoring is the ongoing process as per the EMP regulations set for the subproject under Tranche-3 with 95% projects completed. In accordance to the environmental monitoring programme of each subprojects, during defect liability period monitoring is essentially required to set a benchmark for comparative study during deg=seign, construction and operation phase of the project. Site supervision of above sub-projects under execution was carried out regularly to ensure that environmental impacts are adequately mitigated and to ensure continuation of compliance with statutory regulations as required by laws and agreed upon EMP. The contractor is being regularly guided and instructed to adhere to the provisions of EMP under contractual conditions.

Signed by:

Authorized signatory from Implementing Agency/ Executing Agency.

(Abdul Majid Shabnum)
Director Safeguards
J&K ERA

Appendix-1: Public Consultation (Participants) Details of Rawalpora SWD in Srinagar

Jammu and Kashmir Urban Development Investment Program
(JKUSDIP)

List of Participants in Consultation with Signatures

Sub Project Name: SWD Project for Rawalpora-Chanpora catchment

Location of Meeting /Consultation: In and Around construction Zone

Date and Time: 28/4/18. 2:30 pm

S.N	Name	Age/ Sex	Occupation	Address	Signature
1	Ab. Majeed	40/M	Business	Rawalpora	
2	Bashir Ahmad	30/M	Business	Rawalpora	
3	Hilal Ahmad	21/M	Student	Rawalpora	
4	Irfan Rasool	30/M	Student	Chanpora	
5	Farooq Ahmad	45/M	Govt Employee	Sanatnagar	
6	Jan Mohd	27/M	Pvt Employee	Wanbal	
7	Mehnaz	29/F	Consultant	Wanbal	
8	M. Ashraf	39/M	Shopkeeper	Bypass	
9	Subhan Dar	51/M	Business	Sanatnagar	
10	Taj Khar	53/M	Land Dealer	Rangreth	
11	Irshad	25/M	Student	Rangreth	
12	Majid	34/M	Engineering Student	Chanpora	
13	Ishtiyaq	37/M	Business	Nowgam	
14	Sumaira	25/F	Pvt Employee	Peerbagh	
15	Rijat	34/F	Researcher	Srinagar	

Closed for consultation

Appendix-2: Public Consultation (Participants) Details of Mehjoor Bridge and Grade Separator in Srinagar

Jammu and Kashmir Urban Development Investment Program

(JKUSDIP)

List of Participants in Consultation with Signatures

Sub Project Name: New Mehjoor Bridge & Grade Separator Construction Site.

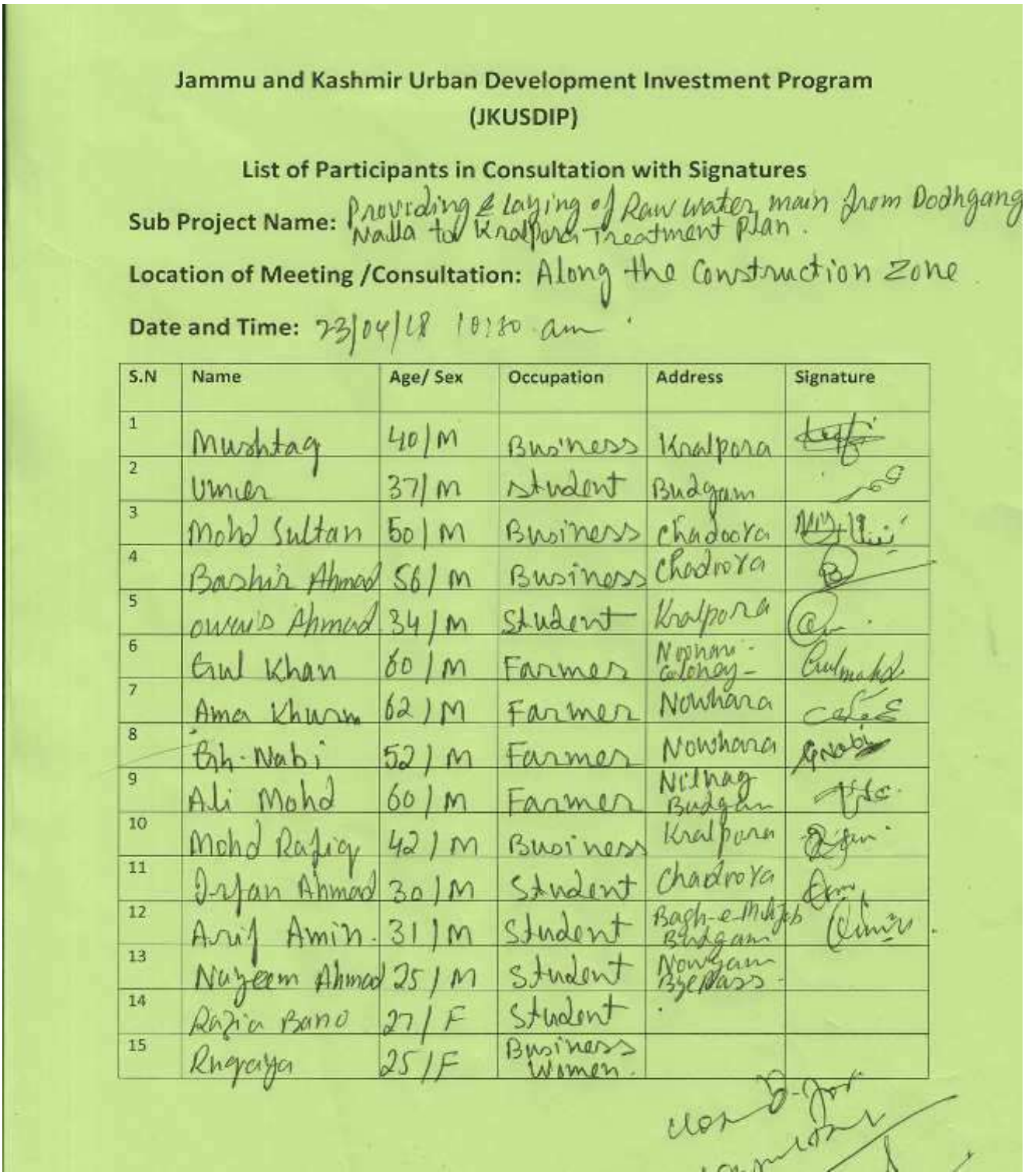
Location of Meeting /Consultation: Around Construction Zone

Date and Time: 17/05/18. 10:30 a.m.

S.N	Name	Age/ Sex	Occupation	Address	Signature
1	Asif	29/M	Student	Srinagar	
2	Mushtaq	35/M	Businessman	Jawahar Nagar	
3	Irfan Ahmad	43/M	Shopkeeper	Jawahar Nagar	
4	Tawheer Ahmad	37/M	Govt Employee	Raj Bagh	
5	Owais Shah	33/M.	Business	Raj Bagh	
6	Faizan	20/M.	student	Eidghan Nagar	
7	Suhaib	26/M.	Pvt Job Employee	Padshahi Bagh.	
8	Saika	22/F.	Student	Jawahar Nagar	
9	Mehreen	22/F.	Student	Raj Bagh	
10	Nusrat	22/F.	Pvt Employee	Lal mandi	
11	Bilqees	40/F	House wife	Raj Bagh	
12	Shabeer Ah.	43/M	Govt Employee	Srinagar	
13	Jan Mohd	29/M	Pvt Employee	Dalgate SGR.	
14	Showkat	36/M.	Business man	Soniwar, SGR	
15	Bashir Ah.	58/M	Farmer	Raj Bagh	

Closed at

Appendix-3: Public Consultation (Participants) Details of Doodhganga Water Supply, Srinagar.



Jammu and Kashmir Urban Development Investment Program
(JKUSDIP)

List of Participants in Consultation with Signatures

Sub Project Name: Providing & Laying of Raw water main from Dodhganga Nalla to Kralpora Treatment Plan.

Location of Meeting /Consultation: Along the Construction Zone

Date and Time: 23/04/18 10:30 am.

S.N	Name	Age/ Sex	Occupation	Address	Signature
1	Mushtaq	40/M	Business	Kralpora	
2	Umer	37/M	Student	Budgam	
3	Mohd Sultan	50/M	Business	Chadoora	
4	Bashir Ahmad	56/M	Business	Chadoora	
5	Owais Ahmad	34/M	Student	Kralpora	
6	Gul Khan	60/M	Farmer	Noonar Colony	
7	Ama Khan	62/M	Farmer	Nowhara	
8	Gh. Nabi	52/M	Farmer	Nowhara	
9	Ali Mohd	60/M	Farmer	Nilnag Budgam	
10	Mohd Rafiq	42/M	Business	Kralpora	
11	Irfan Ahmad	30/M	Student	Chadoora	
12	Arif Amin	31/M	Student	Bagh-e-Mehtab Budgam	
13	Nayeem Ahmad	25/M	Student	Nowgam Bye Pass	
14	Razia Bano	27/F	Student		
15	Rugaiya	25/F	Business Women		

Appendix-4: Sampling Site location of Storm Water Drainage in Rawalpora Srinagar

Appendix- 5: Sampling site location map of New Mehjoor Bridge and Grade Separator, Srinagar

Appendix-6:Sampling site location map of Doodhganga Water Supply Subproject Srinagar

SOUTH ASIA REGIONAL DEPARTMENT
SAUW Semi-Environmental Monitoring Report Log Sheet

Project title:	**IND: Jammu and Kashmir Urban Sector Development Investment Program – Tranche 3**			
Loan Number:	3132	**Project Number:**	41116-043	
Overall Project and Objectives	The proposed JKUSDIP will foster the economic growth in Jammu and Kashmir State. The long term project objectives are to contribute to the economic development of Jammu and Kashmir through enhanced and sustainable growth in the main urban areas with emphasis on promoting commerce and on improvement of livelihood for the poor. In Srinagar, there are three sub-projects: (i) Construction of Surface water Drainage System for Rawalpora-Chanapora area; (ii) Providing and laying of Raw Water main from higher reaches of DoodhgangaNallah to Kralpora Treatment plant at Srinagar; and (iii) Construction of New Mehjoor Bridge at Jawahar Nagar (100% Completed) and Two Grade Separators in Srinagar city. In Jammu, there are four sub-projects: (i) Rehabilitation of Water Supply Network in Identified Areas within Zone 2, 3, 4 and 5 in Jammu City. Contract Package No: JKUSDIP/Jammu/WS 05; (ii) Providing, Laying, Jointing, Testing and commissioning of Sewerage Network in Bakshi Nagar, Shakti Nagar, Shiv Nagar and Janipur Areas in Division A Phase II at Jammu. Contract Package No: JKUSDIP/WW/07; (iii) Multi-Level mechanized Parking at City Chowk Jammu; and (iv) Upgradation of Water Supply Network for reduction of Non-Revenue Water (NRW) in Zone-1 in Old City, Jammu. Note: Loan closing was on 30 May 2017 and financial closing on 8 February 2018. However, it was noted in the SEMR that the construction for 5 packages (3 in Srinagar and 2 in Jammu) are still on-going. Therefore EMP implementation should still be reported to ADB until the Project Completion Report (PCR[1]) is issued.			
Approved Categorization	Category A		Category C	
	X	Category B		FI
Loan Effectivity Date:	19 August 2013		**Frequency of Reporting**	Semi-Annual
Project Officer	Momoko Tada	**Project Analyst**	Susan Francisco	
Reporting Year	2018	**Coverage Period**	January – June 2018	
Dates	**PMU submission to ADB**	20 November 2018	**ADB comment submission to PMU**	8 January 2019

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
A. Project Safeguards Team *(check loan agreement and PAM requirements)*				
PMU[3]	No available information	PAM requires 4 safeguards experts hired in the PMU (2 for environment (Srinagar and Jammu), 2 for social (Srinagar and Jammu).	In the next SEMR, ensure to include information on PMU safeguard experts and PMC safeguard consultants.	Noted. Currently two environmental experts- one each at Jammu and Srinagar-are working in PMU. However one Social expert is looking after both the regions.

[1] PCR – Project Completion Report
[2] PMU to provide detailed response. This log sheet will be attached to the SEMR and disclosed on ADB website.
[3] PMU – project management unit

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
		Although the project is now financially closed, civil works are still ongoing. Therefore, safeguards experts in the PMU and the PMC safeguard consultants are still required to oversee the ongoing implementation.		The contractual tenure of Project Management Consultancy (PMC) was over in Sept 2017, since then no PMC service is available for the projects.
PIU[4]	No available information	PAM does not mention any safeguards officer or expert at the PIU level. The Project Management Consultant (PMC) has safeguard experts who are tasked to assist the PMU and PIUs (see below).	None.	
Consultants	No available information	The PMC requires to have Environmental Expert (20 person-months) and Social, Gender and Resettlement Expert (25 person-months).	In the next SEMR, ensure to include information on PMC safeguard consultants.	The contractual tenure of Project Management Consultancy (PMC) was over in Sept 2017, since then no PMC service is available for the projects.
Safeguards implementation arrangement *(check PAM, EARF if applicable and IEEs)*	No available information.	The PMU safeguard experts will lead safeguards implementation, with the assistance from the PMC and DSC. The contractors are required to have full time environmental safeguards officers who will implement the EMPs.	In the next SEMR, ensure to include summary on the safeguards implementation arrangement, including information on the environmental safeguards officers of contractors.	Noted. Same will be included in the next SEMR.

[4] PIU – project implementation unit

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
		Although the project is now financially closed, civil works are still ongoing. Therefore, contractors are still required to engage full time environmental safeguards officers.		
B. Overall Project and Subproject Description *(summarize number and type of packages)*[5]				
Number of Packages with civil works *(check if consistent with latest procurement plan)*	7 (3 in Srinagar and 4 in Jammu).	Loan closing was on 30 May 2017 and financial closing on 8 February 2018.	None.	
Number of DB/DBO packages and status	None		None.	
Number of civil works packages and status	Srinagar: 3 packages – still ongoing Jammu: 2 packages – still ongoing 2 packages – 100% completed.		In the next SEMR, continue to report on the progress of implementation of these packages.	Noted.
IEEs cleared for awarded packages?		Yes. The IEEs corresponding to the awarded packages are disclosed on ADB website.		
Safeguard documents disclosed on project website?	No information available.		In the next SEMR, ensure to include information on disclosure of safeguard documents on project website.	Noted.
SEMR information on implementation phase (bidding, on-going, construction, completed, under operation, others)	SEMR includes information. All packages except the following have been completed: (i) Srinagar area, construction works as of end June 2018: - Construction of Surface water Drainage System for	The SEMR is clear on the physical progress of subproject implementation.	In the next SEMR, continue to report on the progress of implementation.	Noted.

[5] DB/DBO – design-build or design, build, and operate or where contractor will finalize the detailed engineering design; civil works contract – sufficient details of the package is known and used as basis for bid/contract's Technical Specification

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
	Rawalpora-Chanapora area (Physical progress - **96.70% completed**.) - Providing and laying of Raw Water main from higher reaches of DoodhgangaNallah to Kralpora Treatment plant at Srinagar(Physical progress - **80.50% completed**.) - Construction of New Mehjoor Bridge at Jawahar Nagar (100% Completed) and Two Grade Separators in Srinagar city". (Physical progress - **55.00% completed**.) (ii) Jammu area construction works as of end June 2018: - Rehabilitation of Water Supply Network in Identified Areas within Zone 2, 3, 4 and 5 in Jammu City. Contract Package No: JKUSDIP/Jammu/WS 05. (Physical progress – **96.00% completed**.) - Providing, Laying, Jointing, Testing and commissioning of Sewerage Network in Bakshi Nagar, Shakti Nagar, Shiv Nagar and Janipur Areas in Division A Phase II at Jammu. Contract Package No: JKUSDIP/WW/07. (Physical progress – **99.00% completed**).			
SEMR information on construction activities progress	Same as above.	The SEMR is clear on the physical progress of subproject implementation.	In the next SEMR, continue to report on the progress of implementation.	Noted.
C. Status of compliance with statutory clearances *(check IEE for the complete list, summarize the findings for each package – obtained/under application and if obtained, specify validity period)*				
Environmental Clearance (EC)	EC not required under the project	It is clear in the EARF and IEEs that EC is not	None.	

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
		required under the project per 1994 EIA Notification		
Forest Clearance	None			
No Objection Certificate/Letter	None			
Site location clearance	None			
Permit/Consent to Construct (or equivalent)	None			
Permit/Consent to Operate (or equivalent)	All CTOs exist as of the reporting period.	However, some have expired with the period, as follows: (i) Two Consents to Operate (CTOs) equipment (i.e. stone crusher plant and hot mix plant) in Srinagar site; and (ii) One CTO equipment (i.e. stone crusher plant) in Jammu site.	Ensure to include in the next SEMR copies of renewal of these CTOs that expired.	Noted. Same will be annexed.
Road-cutting permit	None is required.		In the next SEMRs, continue to report on the validity of permits secured under all packages.	Noted.
Utilities shifting permit	None is required.			
Tree-cutting permit	Permits required have been obtained.			
Others (specify)				
D. Status of Compliance with loan covenants *(verify items in SEMR with project loan agreement)*				
EA to ensure the preparation, design, construction, implementation, operation and decommissioning of the project, and all subproject facilities comply with; (i) all applicable laws and regulations of the Borrower and the State relating to environment, health, safety; (ii) the Environmental Safeguards;(iii) EARF; and (iv) all measures and requirements set forth in the respective IEE and EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	Being complied with	The EA needs to comply with this for all subprojects, whether partially or fully completed. Monitoring of compliance should continue until ADB issues a PCR.	Continue monitoring of compliance with this loan covenant and report status in the next SEMR.	Noted.

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
EA to ensure all bidding documents and contracts for Works contain provisions that require contractors to:- Comply with the measures and requirements relevant to the contractor set forth in the IEE and EMP; and any corrective or preventive actions set out in a Safeguards Monitoring Report.	The bidding documents and contract agreements for work are incorporated with the provisions set forth in the IEE and EMP and are being complied with.	All contracts have already been issued.	None.	
EA to ensure all bidding documents and contracts for Works contain provisions that require contractors to:- make available a budget for all such environmental measures.	Environmental monitoring and mitigation costs allocated/ incorporated in contract agreements.	All contracts have already been issued..	None.	
EA to ensure all bidding documents and contracts for Works contain provisions that require contractors to:- provide the EA with a written notice of any unanticipated environmental impacts that arise during construction, implementation or operation of the project that were not considered in the IEE and in the EMP.	Being complied with.	The EA needs to comply with this for all subprojects, whether partially or fully completed. Monitoring of compliance should continue until ADB issues a PCR.	Continue monitoring of compliance with this loan covenant and report status in the next SEMR.	Noted.
EA to ensure all bidding documents and contracts for Works contain provisions that require contractors to:- adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction	The existing condition of roads and other infrastructure has been recorded in the form of photographs and video recording as well.	The EA needs to comply with this for all subprojects, whether partially or fully completed. Monitoring of compliance should continue until ADB issues a PCR.	Continue monitoring of compliance with this loan covenant and report status in the next SEMR.	Noted.
EA to ensure all bidding documents and contracts for Works contain provisions that require contractors to:- fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project	All the areas that if disturbed by construction activities will be cleared and restored to pre-project condition.	The EA needs to comply with this for all subprojects, whether partially or fully completed. Monitoring of compliance should continue	Continue monitoring of compliance with this loan covenant and report status in the next SEMR.	Noted.

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
condition upon the completion of construction.		until ADB issues a PCR.		
The Borrower shall ensure or cause the EA to submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission.	Semi-annual reports are prepared and submitted to ADB as per the guidelines.	The EA needs to comply with this for all subprojects, whether partially or fully completed. Monitoring of compliance should continue until ADB issues a PCR.	Continue monitoring of compliance with this loan covenant and report status in the next SEMR.	Noted.
The Borrower shall ensure or cause the EA to ensure that if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, the RP or the IPP as applicable, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan	In case of any unanticipated environmental risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE and EMP as applicable that shall be immediately informed to ADB with detailed description of the event and proposed corrective action plan.	The EA needs to comply with this for all subprojects, whether partially or fully completed. Monitoring of compliance should continue until ADB issues a PCR.	Continue monitoring of compliance with this loan covenant and report status in the next SEMR.	Noted.
The Borrower shall ensure or cause the EA to report any breach of compliance with the measures and requirements set forth in the EMP, the RP or the IPP promptly after becoming aware of the breach.	Breach will be reported to ADB immediately after becoming aware of it.	The EA needs to comply with this for all subprojects, whether partially or fully completed. Monitoring of compliance should continue until ADB issues a PCR.	Continue monitoring of compliance with this loan covenant and report status in the next SEMR.	Noted.
E. Contractors Compliance with Environmental Safeguards Requirements				
Appointment of Environment, Health and Safety (HSE) and/or nodal person	No available information in the SEMR.	The loan agreement and PAM states that contractors will have the responsibility to implement the IEEs and EMPs. And that the IEEs explicitly states the responsibility of a contractor to appoint its own full time environmental	Provide information on the appointment of full time environmental safeguards officers (or equivalent) of contractors.	Noted. Same will be provided in the next report.

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
		safeguards officer.		
Submission of site-specific EMPs	No information provided in the SEMR	This has not been required in the loan agreement, PAM or IEEs.	None	
Submission of SEMP implementation report *(specify in comments frequency – daily, weekly, monthly or quarterly basis)*	No information provided in the SEMR	This has not been required in the loan agreement, PAM or IEEs.	None	
Site verification by PMU, PIU, or consultants *(verification report should be attached to the SEMR)*	No separate site verification report attached to the SEMR	The SEMR discusses all the environmental monitoring activities such as environmental sampling done.	In the next SEMRs, always attach the following: (i) separate reports duly signed by the field inspectors (PMU, PIU or consultants) on the monitoring activities done; (ii) photos taken during the inspections; and (iii) copies of certificates of laboratory analysis of environmental samples taken (ambient air, noise, and water).	Noted. Same will be attached in the next report.
SEMR compliance matrix on mitigation measures implementation (matrixes are based on approved SEMPs)	No detailed discussions provided in the SEMR.	The SEMR does not have compliance analysis on the mitigation measures presented in the EMPs.	Confirm if contractors is satisfactorily complying with EMP and implementing mitigation measures. In the next SEMR, provide a section in the report to discuss compliance on each mitigation measures indicated in the EMP. For convenience, use the EMP tables in the IEEs and add	All the contractors of the ongoing work are complying and implementing EMP satisfactorily.

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
			another column to discuss the compliance of each mitigation measure.	
Other information	Statutory clearances such as Consents to Operate (CTOs), tree cutting permit requirements, etc. are discussed and summarized in the SEMR.	As commented above, some CTOs have expired during the reporting period. Update on the renewal of these CTOs should be reported in the next SEMR.	In the next SEMR, continue to report on the status of all statutory clearances, including the renewal of expired CTOs or any permits that are still needed by the subprojects with ongoing civil works.	Noted.
F. Environmental Monitoring				
Rationale	No information.			
Parameters to be monitored are commensurate to the impacts, mitigation measures, and project/subproject/package	This is discussed in the SEMR. Environmental sampling activities were conducted for ambient air, noise level and surface water quality.	This complies with the parameters discussed in the IEEs and EMPs.		
Sampling locations identified and appropriate	Sampling locations are discussed, and the maps showing these locations are attached.	On the ambient air quality and noise level sampling – no discussion as to how the locations were selected. On the surface water quality sampling – it is satisfactory since the sampling activities were conducted at both the upstream and downstream portions relative to the locations of construction activities.	In the next SEMR, please include discussions on the basis of selecting sampling locations for the following: (i) ambient air quality; and (ii) noise level. Continue to conduct surface water quality sampling at the upstream and downstream portions relative to the locations of construction activities.	Noted.
Sampling frequency identified and appropriate	One sampling for each location was conducted during the reporting period.	At least one sampling is enough, provided that sampling activities are conducted when	In the next SEMR, indicate the activities being undertaken when	Noted.

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
		there are construction activities under the project.	environmental sampling is conducted.	
Sampling collection and analysis are in accordance with internationally-accepted practices	The method of analysis of samples collected are based on national standards.	The method of analysis are based on national standards. This is consistent with the provision in the IEEs and EMPs wherein national standards will be followed.	Continue monitoring of compliance with the methods of analysis of samples collected, and report status in the next SEMR.	Noted.
Standards and performance indicators are compliant with ADB SPS requirements[6] (provide justification if less stringent standards are used)	The standards are presented in the SEMR.	The presentation in the SEMR is similar to the presentation in the IEE. It is explicit in the IEEs that the project will comply with the national standards for ambient air, noise and water.	Continue monitoring of compliance with the standards and report status in the next SEMR.	Noted.
G. Environmental monitoring results (narrative based on presented results)				
Air quality results	Ambient air quality sampling in two locations in Srinagar site revealed $RSPM_{10}$ results higher than the standard. Field verification showed that this is attributed to both the heavy traffic and construction activities in the area. It was also noted that the baseline data from these sampling sites already revealed higher value of $RSPM_{10}$ compared to the standards. Even so, the contractors were advised to implement its	The results of the sampling are well presented in the main body of the SEMR. However: (i) copies of the certificates of laboratory analysis are not attached to the SEMR; and (ii) no discussions on the basis of selecting the sampling locations.	In the next SEMR, include the following: (i) attach as appendix copies of the certificates of laboratory analysis on samples collected; and (ii) discussions on the basis of selecting the sampling locations.	Noted. Same will be attached.

[6] ADB SPS (Appendix 1 para 33) requires projects to apply pollution prevention and control technologies and practices consistent with international good practices as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines (https://www.ifc.org/ehsguidelines). These standards contain performance levels and measures that are normally acceptable and applicable to projects. When host country regulations differ from these levels and measures, the borrower/client will achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the borrower/client will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented ADB SPS.

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
	corrective action plan to effectively control dust generation in the area.			
Water quality results	Surface water quality monitoring was also done at various sampling points in streams/rivers near the subproject sites. Analysis showed mixed results wherein some sampling sites gave marginally higher values than the standards. However, field verification revealed that these higher values are attributed to anthropogenic activities in the city and not because of the ongoing subproject activities.	The results of analysis and sampling locations are well presented in the SEMR.	In the next SEMR, include information on whether the sampling activities were conducted when civil works under the project are ongoing.	Noted.
Noise quality results	Noise level measurements have been conducted at construction sites. Most results reveal higher values than the standards. However, it is noted that baseline noise level at these sites were already higher than the standards. Even so, the contractors were advised to strictly implement the EMPs to mitigate high noise levels at the sites.	The results of the sampling are well presented in the main body of the SEMR. However: (i) no copies of the certificates or logs/printouts of actual noise measurements are attached to the SEMR; and (ii) no discussions on the basis of selecting the sampling locations.	In the next SEMR, include the following: (i) attach as appendix copies of the certificates or logs/printouts of actual noise level measurements; and (ii) discussions on the basis of selecting the sampling locations.	Noted.
Others	n/a			
H. Consultations and/or FGDs during the reporting period				
Number	3			
Reason/s for consultations/FGDs	Continuing consultations in compliance with IEEs and EMPs.	This is in compliance with the responsibility of EA to conduct continuous consultations throughout the project implementation phases.	Continue monitoring of compliance with this responsibility and report status in the next SEMR.	Noted.
Number of participants	45			
Number of female participants	8	Only 8 out of 45 are female. There is a need	Ensure to involve more women in the	Noted.

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
		to improve/increase the participation of women.	consultation activities, and report results in the next SEMR	
I. Trainings, Workshops, Seminars during the reporting period				
Number	No information in the SEMR.		In the next SEMRs, include summary of training, workshops or seminar conducted during the reporting period. If there is none, ensure to state as well.	Noted.
Topics	No information in the SEMR.			
Number of participants	No information in the SEMR.			
Number of female participants	No information in the SEMR.			
J. Grievance Redress Mechanism				
GRM per PAM or IEE/EARF established	No discussion in the SEMR.	It is suggested to include a summary or brief discussion of the GRM and GRC membership	In the next SEMR, provide a summary discussion on the GRM in place based on the IEE, including current membership of the GRC. Also include any other additional information pertaining to the implementation of the GRM, such as capacity development training of GRM members, meetings, etc.	Noted
GRM notified via publication or notice boards	No discussion in the SEMR.			
GRM members identified	No discussion in the SEMR.			
GRM members have capacity to address project-related complaints *(detailed information on capacity development of GRM members such as trainings, workshops, briefings, etc should be attached in the SEMR)*	No discussion in the SEMR.			
Number of meetings conducted *(attach minutes of the meeting)*	No discussion in the SEMR. However, it is clear in the SEMR that there were no complaints or grievances received during the reporting period.		None. In the next SEMR, continue to report whether or not there are complaints received during the period and discuss the status of resolution of the complaints, if any.	Noted.
K. Complaints Received *(detailed information on nature of complaints, summary and status of resolution)*				
Number of complaints	No complaints received during the reporting period.	None.	In the next SEMR, continue to report	Noted.

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
Nature *(provide summary of issues/concerns)*	n/a	None.	whether or not there are complaints received during the period, and discuss the status of resolution of the complaints, if any.	
Status of resolution	n/a	None.		
L. Summary of Issues and Corrective Actions				
Major issues/concerns (specify)	No discussion in the SEMR.	SEMR is not clear on construction-related issues/concerns compliance analysis on the mitigation measures are is not reported.	Confirm if contractors is satisfactorily complying with EMP and implementing mitigation measures.	All the contractors of the ongoing work are complying and implementing EMP satisfactorily.
Corrective Action to be implemented, timeline, responsible person/s, and budget are clearly specified	None.			
M. Status of Corrective Action Plan from Previous Reporting Period (list all and provide status)				
N/A				
N. Appendixes				
Photos	None	There is a need to provide photos of field inspection, sampling activities and consultation meetings.	In the next SEMR, ensure to include as appendix photos of actual conduct of field inspections, sampling and consultation activities (see below related comment).	Noted.
Summary of consultations	The summary of consultations is included in the main body of the report.	Although the summary of consultation meetings is discussed in the main body of the report, a separate standalone highlights or minutes of meeting, including signed attendance sheets, should be prepared and attached as	In the next SEMR, ensure to include as appendix the following: (i) minutes or highlights of consultation meetings; (ii) attendance sheet signed by participants, including information on the gender of	Noted.

Item	Findings in the SEMR	Comments	Action/s Required	Response by PMU[2]
		appendix. Only signed attendance sheets are provided in the appendix.	each participant; and (iii) photos of the actual conduct of consultation meetings.	
Copies of environmental clearances and permits	None is included in the SEMR.	Copies of environmental clearances or permits secured during the reporting period should be provided and attached as appendix.	In the next SEMR, ensure to attach as appendix all clearances or permits secured or renewed during the reporting period.	Noted.
Site EMPs	N/A			
Checklists	N/A			
Others				
O. Review and clearance for disclosure				
Reference	SEMR submitted on 20 November 2018			
	Name	Date		
Reviewed by	Miguel Diangan	9 January 2019		
Noted by	Ninette Pajarillaga	23 January 2019		
Response to ADB comments by	Director Safeguards J&K ERA	6 February 2019		
Status/Remarks	Recorded as submitted	20 November 2018		
	Send comments to PMU for responses to comments and guidance for the next SEMR.			